

DEFENSE INDUSTRY BULLETIN

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IN THIS ISSUE

The Project Manager—Manager Extraordinary	1
ASPR Changes Made to Assist Military Sales	2
Guidelines for Developing and Submitting Unsolicited Proposals U. S. Army	3
Microelectronics and the Systems Approach	4
Commodity Managers: Their Role in the Army's Supply System	12

DEPARTMENTS

About People	7
Meetings and Symposia	9
Calendar of Events	10
Speakers Calendar	11
From the Speakers Rostrum	17
Bibliography	22
Notes to Editors	23
Defense Procurement	25



THE ARMY CUSTOMER



"Take a look at the man we're all working for. This is our 'Customer' — the ultimate user — and the ultimate weapon. Although he usually fights in large numbers, the occupation of the combat soldier is often a lonely one. He has quite a load on his shoulders — as measured both in mission and in deadweight pounds"

The foregoing is quoted from the presentation given by Major General Frank W. Moorman, Commanding General, U.S. Army Electronics Command, at the recently completed DOD-NSIA Advanced Planning Briefings for Industry. Highlights from all the Army addresses made at the briefings begin on page 17. Subsequent issues of the *Bulletin* will carry highlights of the Navy and Air Force presentations.

The Editors



DEFENSE INDUSTRY BULLETIN

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The purpose of the *BULLETIN* is to serve as a means of communication between the Department of Defense (DOD) and its authorized agencies and defense contractors and other business interests. It will serve as a guide to industry concerning official policies, programs and projects, and will seek to stimulate thought by members of the defense-industry team in solving the problems that may arise in fulfilling the requirements of the DOD.

Material in the *BULLETIN* is selected to supply pertinent unclassified data of interest to the business community. Suggestions from industry representatives for topics to be covered in future issues should be forwarded to the Business & Labor Division.

The *BULLETIN* is distributed each month to the agencies of Department of Defense, Army, Navy, and Air Force, and to representatives of industry. Request for copies should be addressed to the Business & Labor Division, OASD/PA, Room 2E813, The Pentagon, Washington, D.C. 20301, telephone, OXford 5-2709.

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Economic Impact Data to be Reported by Contractors

The first two reporting formats and instructions of the new Cost and Economic Information System (CEIS), currently undergoing development in the Defense Department, have been cleared for test by the Bureau of the Budget. The two reporting formats are designed to provide DOD with information which will assist in assessing the economic impact of its various programs.

The policy of DOD is that the impact will not influence its weapon acquisition decisions. Nevertheless, it is important that the impact be known in order that other Government agencies, committees and organizations directly concerned can take such actions as may be desirable to alleviate adverse consequences of shifts in defense procurements.

The two reporting formats require plant-wide and individual project data. The plant-wide data includes a summary of employment on DOD projects, National Aeronautical and Space Agency projects and all other work. This format will also be utilized by NASA. The individual project data

includes employment and "costs incurred" for major DOD programs. Contractors will report on firm, contracted business only.

The reporting formats to be utilized in this test incorporate the suggestions and comments of the Military Departments, the Council of Defense and Space Industry Associations and a group of selected contractors. Suggestions and comments obtained during the test will be used to improve the formats. Current plans call for the installation of these two reporting forms as a semi-annual requirement. When the remaining portions of the CEIS system are promulgated, the system will replace the Defense Contractors Planning Report (DCPR), currently required from aircraft and missile manufacturers.

The DOD-oriented plants which are to be covered will be furnished the formats and instructions directly by the Military Department which has the major defense work in the plant. NASA will request the plant-wide report from those plants in which it has the dominant interest.

Newsman Phil Goulding New Dep. Asst. Sec. of Def. (Public Affairs)



Asst. Secretary of Defense (Public Affairs) Arthur Sylvester discusses appointment with his new deputy, Phil G. Goulding.

Phil G. Goulding, who became Deputy Secretary of Defense (Public Affairs) on April 19, brings to his new position a thorough knowledge of the Pentagon "beat." Prior to the appointment, he was military affairs correspondent for the *Cleveland Plain Dealer*.

Mr. Goulding was born in San Francisco, Calif. He attended public schools in Shaker Heights, Ohio, and received a Bachelor of Science degree from Hamilton College, Clinton, N.Y.

During World War II, Mr. Goulding served as an officer in the U.S. Navy in both the European and Pacific theaters of operation.

Following his release from active military duty in 1947, Mr. Goulding started work for the *Cleveland Plain Dealer*. Three years later he was transferred to the Washington Bureau. During his first seven years in the nation's capital, Mr. Goulding covered general assignments, including Congress and National politics. For the last eight years he has covered military affairs.

Mr. Goulding succeeds Nils A. Lennartson, who resigned on April 10 to accept a position as President of the Railway Progress Institute.

The Project Manager -- Manager Extraordinary

by

Major David I. Cleland, USAF

The phenomenon of an increasingly dynamic technology in weaponry and in industrial management since World War II has no precedent. During World War II and the Korean War the emphasis of defense effort in the acquisition of weaponry¹ centered around standardized products with high volume output. Management attention was directed to developing an optimum efficiency in the flow of work through the functional departments of the organization to the customer. Changing roles and missions in the military establishment, and in the design and development of modern weaponry, in more recent times has emphasized the need for greater consideration of relative trade-offs between cost, availability and operational compatibility of the weapon system. The need arose for a managerial philosophy which integrates the input from many collaborating management groups and organizations into a meaningful pattern of accomplishment. Manufacturing emphasis changed from *production* orientation to *project* orientation. *Project management* provides the *new way of thinking* required to bring about managerial unity directed to attaining specific project goals within a functional (or commodity) type of organizational structure.

Advent of the Project Manager.

The project manager may simply be defined as that individual who is appointed to accomplish the task of integrating functional and extra-organizational efforts directed toward the development and acquisition of weaponry. The concept of

project management has evolved from traditional management theory; the mainstream of thought as developed in the "traditional" management school includes:

- Organizations function as an integrated entity on a vertical basis.
- A strong superior-subordinate relationship is required to preserve unity of command and to ensure unanimity of objective.
- Individual functional managers are parochial (and rightly so).
- Functional managers maintain lateral staff coordination to obtain integrated staff action.
- Organizational groups have a basic dichotomy, viz., *the line* and *the staff*.
- A scalar chain of authority relationships exists within the organization ranging from the ultimate authority to the lowest rank with the line of authority following every link in the chain.
- An employee should receive orders from one superior only.
- Work progresses among relatively autonomous functional units of an organization.



Maj. David I. Cleland, USAF, (M.S., Univ. of Pittsburgh; Ph.D., Ohio State Univ.) is assistant head of the Systems Management Department and Assistant Professor of Management, School of Engineering, Air Force Institute of Technology. He was formerly Program Manager for the KC-135B Command and Control System.

Unfortunately expertise in the science and art of management has lagged the advancements in development and engineering. Today's *project manager*, who becomes actively engaged in the development and acquisition of weaponry, is confronted with the coordination and integration of large aggregations of human and non-human resources; the greater part of such resources are outside the traditional patterns of organizational theory. Conventional military and business organizations have operated for the most part on a vertical basis; existing management theory was found lacking when it was realized that certain management relationships were evolving in the acquisition of large single-purpose projects which cut across interior organizational flows of authority and responsibility and radiated outside to autonomous organizations. Singular elements of risk and uncertainty, extensive involvement of resources and changing concepts in the employment of weaponry forced the development of a management philosophy which facilitates the blending and unifying of many defense and industrial organizations directed toward a common objective. Existing multilayered and diffused management structures within the industrial and defense organizations concerned complicated the management process. Since traditional management with its functional type of organization did not provide the management posture required, attention is being given to molding the organization around the task with the development of a new generation of management thinking. Thus *project management* appears as a management philosophy that has no organizational or functional constraints and provides for a refreshing *way of thinking* that allows for radical changes in organizational theory and in the management of diverse activities. Dr. John F. Mee, Mead-Johnson Professor of Management, Indiana University, describes a new "matrix" type of organization that has evolved in the defense industry. According to Professor Mee:

¹ *Weaponry*, a generic term, connotes the varied instruments intended to inflict damage to an enemy through the destruction of physical or mental capabilities. *Weaponry* includes that combination of equipment, skills and managerial know-how which, as an integrated entity, is capable of effectively destroying an enemy.

"The concept of a matrix organization entails an organizational system designed as a 'web of relationships' rather than a line and staff relationship of work performance. The web of relationships is aimed at starting and completing specific projects."²

One major difficulty of managerial personnel in adjusting to the concept of project management is their failure to understand its derivation. The construction industry early recognized the need for a management technique that permitted a unifying agent in the ad hoc activities involved in the construction of single, costly projects such as dams, turnpikes and large factories and buildings. In the military establishment, evidence of project management appeared in such endeavors as the Manhattan Project. In the defense industry/Government relationship there has developed a tendency towards greater and greater use of ad hoc offices concerned exclusively with the managerial integration of a single weapon system or subsystem. Increasing use of this managerial innovation indicates that it is becoming sufficiently ingrained in management thought and theory so that serious questions are being raised about the ability of the purely functional directed organization to adequately manage more than one major project successfully. Before the advent of the project manager there existed a tendency to rely on coordinative techniques (through the use of expeditors, coordinators, committees, etc.) to perform the integration task. Such techniques preserved the prerogatives of the functional groups but did not, as does project management, shape the organizational effort around the task or project. Project management was developed by the military/industrial complex as a means to satisfy the requirement for the management of certain defense resources from inception to operational employment. Is it a further refinement of traditional management thought and theory, or is it a revolutionary new development which portends radical changes in organizational theory and in the management of activities by the functional approach?

Characteristics of Project Management.

The project manager is an integrator-generalist; he is concerned with balancing relative factors of technology, schedule, cost and human resources. Within DOD organizations he manages across functional and organizational lines in order to bring together at one focal point the management activities required to accomplish project integration. Functional or commodity organizations provide a basic foundation on which to carry out project oriented activities; the project manager performs all the management functions but heavy emphasis is placed on the function of coordination, or the synchronizing of activities with respect to time and place. The project manager has certain other characteristics which tend to set him apart from the traditional or functional oriented manager:

- By providing a focal point for decision-making involving diverse interests in the organization, faster decisions are effected.
- As a project manager, he is directly and constitutionally involved in managing activities whose accomplishment requires extensive participation by organizations and agencies outside his direct control.
- The project manager's authority and responsibility cuts across functional and organizational lines; consequently, there is a deliberate conflict involved with these managers.
- As the focal point for project activities, the project manager determines the when and what of the project activities whereas the functional managers in supporting many different projects determine *how* the support will be given.
- The project manager, as a point of synthesis for the project, tasks organizational elements outside of his direct control. He pulls together diverse activities such as research, engineering, test, production, operational support, etc., all time-phased over the life of the project.

(Cont. on Page 14)

² Mee, John F., "IDEAtional ITEMS—Matrix Organization," Business Horizons, Summer 1964, P. 70.

ASPR Changes Made to Assist Military Sales

by

Mr. Peter Feigl

Office of International Logistics Negotiation

The recent promotion of military export sales by both industry and the Military Departments has resulted in changes to the Armed Services Procurement Regulation (ASPR). In turn, these changes to ASPR have made possible a growing dollar volume of military sales which are being negotiated and contracted through U. S. Government channels on behalf of foreign governments.

The sales in question are those requiring joint and complementary pre- and post-contract Government-defense industry export promotion efforts.

The ASPR changes were necessary since some provisions of the regulation, which dealt primarily with U. S. Government procurement action for the U. S. Armed Forces, proved inadequate or were not equally valid when procurement action was initiated on behalf of another country on a government-to-government basis under the provisions of the Military Assistance Sales Program.

Thus, a country wishing to purchase a particular make, model or type of equipment from the U. S. had to be given the right to specify such items since the question of equipment standardization in smaller countries, for instance, has a greater impact than procurement from the lowest bidder, a major consideration in the large quantity procurement activities in the U. S.

To cope with some of these special problems, changes had to be made in the ASPR to provide the necessary procurement flexibility demanded by the Military Export Program. One such change or addition is ASPR 6-705, published on March 6, 1964. Since its publication, however, many questions relating to its interpretation have been raised. For this reason, we offer herewith some background information which may make it easier for both the industry and the defense reader to understand the intent of this particular ASPR section.

Background Policy.

On April 7, 1962, the Secretary of Defense stated in a memorandum to the Assistant Secretary of Defense (International Security Affairs), with copies to the Secretaries of the Army, Navy and Air Force: "I should like to encourage sales of military equipment appropriate to the needs of foreign nations, in every possible way."

The Secretary of Defense in DOD Directive 5100.27, dated April 27, 1962, assigned to the ASD (ISA) the responsibility to: "... develop and coordinate DOD plans and programs for the export of military materiel and services to friendly foreign nations to the end that foreign purchases from U. S. Government or industry will be maximized subject to considerations of overall national policy."

On August 15, 1962, the Deputy Secretary of Defense stated in a memorandum to the Secretaries of the Army, Navy and Air Force and to all other major DOD components: "Efforts to reverse the international flow of gold by establishing a balance of payments favorable to the U. S. require active and wholehearted cooperation between the DOD and U. S. industry in broadening and intensifying the military sales program. . . I desire your enthusiastic assistance in insuring full participation in this program."

On July 9, 1963, the Secretary of Defense in a memorandum to the Secretaries of the Military Departments and all other leading components of OSD emphasized the fact that the DOD has for some time been conducting intensified efforts to promote international sales of U. S. equipment. He stated that in preparing for and conducting these negotiations, our objectives should be to:

(Cont. on Page 5)

Guidelines for Developing and Submitting Unsolicited Proposals

U. S. Army

• What are the criteria for deciding whether or not to submit an unsolicited proposal?

• What are some of the ground rules for preparing a proposal?

• On what basis is a proposal evaluated?

• Where should a proposal be submitted?

To assist industry in answering these questions, the guidelines for developing and submitting unsolicited proposals to the U.S. Army are reproduced below. The guidelines for submission to the U.S. Navy and U.S. Air Force will appear in future issues.

Many important defense research and development and production programs result from unsolicited proposals made by companies having a sincere desire to apply their talents and facilities to national security. While not as many such proposals are adopted as may be considered desirable by industry, the Defense Department still considers unsolicited proposals a vital factor in fulfilling its military requirements.

An unsolicited research and development proposal is a document voluntarily initiated and prepared by a potential contractor offering a possible solution to a defense problem or requirement. It is usually the result of a decision by a company that it has conceived something new or novel and that, if sponsored, it can demonstrate that the idea has both scientific merit and a military application.

Criteria for Determining Whether to Submit a Proposal.

In deciding whether or not to submit a proposal, industry should ask, "Are we uniquely qualified or particularly competent in this field?" Even if the answer is no, the question should be re-phrased to ask, "Are we at least as well technically qualified as anyone else?" Finally, the question should be asked, "Would it make sense for the Government to give us a contract for this work?"

If a company is certain it is *uniquely* qualified to tackle a problem, it is probably in a position to write a highly acceptable proposal, with a good chance for support. The following might be considered one of the rules of thumb for any proposal: If a uniqueness by virtue of personnel, propriety techniques, patents, or facilities can be demonstrated, spell it out. It all adds up to being able to offer the Government the most economical answer to its problem. Not infrequently, companies are anxious to get into an entirely new area in order to diversify their activities. Considerable effort may then go into a proposal in vain for, unless the company can demonstrate that its activities in another field are applicable to the problem at hand, the chances are good that the proposal will not be accepted. Insofar as R&D is concerned, the Government is not normally in the role of assisting industrial organizations to diversify their activities. These, then, are some of the factors that must be weighed before deciding to submit a proposal.

Ground Rules for Preparing a Proposal.

In organizing a proposal, several considerations should be kept in mind. First, as with any technical document exceeding five or 10 pages, a summary is desirable. This permits the sense of the proposal to be gathered at once and helps orient the reader.

Following the summary, an introduction may be desirable, depending upon the circumstances. Basically, an introduction is intended to orient the reader, give him the

background, acquaint him with the problem and lead him into the body of the proposal. If the summary has already done this, it of course is not worthwhile to repeat the entire message solely for the sake of having an introduction. In some cases, the introduction is a logical place to present additional information that will help justify the approach selected. This may take the form of information regarding some unique process or technique developed which will be particularly well suited to the problem, or a brief explanation of the potential the proposal offers for other problems facing the Army agency. In either case, the intent is the same—to offer evidence supporting the proposal.

The next major portion of the proposal is usually the statement of the problem. The intent of this section is to demonstrate an understanding of the problem. In many respects, it is one of the most difficult sections to prepare because it should present enough information to demonstrate an appreciation of the subtleties of the problem without going into a prolonged technical analysis. Remember that the proposal is intended to demonstrate how *your company* would go about solving the problem, not your ability to restate the Government's problem. In rare cases, the statement of the problem may justifiably require supporting information, such as a historical background or a summary of the present state of the art. To avoid cluttering up the proposal, it may be well to extract the pertinent facts of such sections and relegate the details to an appendix.

Once the problem has been stated, the proposed approach to the problem should be given. In many respects, this is the heart of the proposal for it is the section that usually receives paramount attention. A well-stated understanding of the problem, the best facilities, the most talented personnel and all of the other advantages that a contractor can offer may well be unimportant if he does not offer a logical and promising approach.

The make-up and organization of the team proposed for the work should be spelled out; and, again, in order to keep the proposal uncluttered, résumés of the team members should be given in an appendix. Some contractors choose the present résumés of many people in addition to those who will be engaged on the program. To the extent that such résumés indicate the attributes of personnel who will make supervisory or tangential contributions to the program, this may be worthwhile. On the other hand, résumés of people who, by their title or position, do not appear even remotely connected with the program could very well be construed as padding.

In some programs, the work proposed may be scheduled in several phases or work units. If so, a section entitled "schedule," in which the work is displayed along the projected period of performance, is desirable. For convenience and clarity's sake, a simple bar graph may prove effective. In many instances, it may be worthwhile to include a section on "specific qualifications." This is a useful means for presenting information on past or concurrent efforts that have specific bearing on the proposed program. In particular, specific contracts in related fields should be mentioned. This section may make reference to facilities or other company experience presented in an appendix.

The body of the proposal should contain a firm contractual statement summarizing the scope of work and offering to do it for a certain sum and within a certain

(Cont. on Page 8)

Microelectronics and the Systems Approach

by

Captain A. J. Stanziano, USN

World War II witnessed the introduction of significant quantities of equipment of considerable sophistication in military aircraft, other vehicles and installations. With the manpower and resources available under the press of war, such equipment could be maintained in a reasonable state of repair.

Following the war, developments were undertaken, particularly in the guided missile and aircraft electronics fields, which were an order of magnitude jump in terms of sophistication and complexity. It was during the test phases of these more sophisticated research and development programs that the plague of non-reliability threatened to become an epidemic. It was a rare occurrence when a flight test was performed in which all subsystems performed without failure.

With the excellent vision of hindsight, it is obvious that these failing systems performed exactly as they should considering individual component reliability and the degree of complexity. In fact, any other behavior would have been a violation of the laws of probability. The recognition by management in the early 1950's that component reliability was a consideration in the success of complex programs was a great step forward, trivial as this statement may sound. It then became *de rigueur* to include some vague statements on reliability in equipment specifications, such as "the system shall be free from recurrent failure." On the industrial side, any contractor had to have a reliability coordinator attached to a reasonably high corporate officer and a staff dubbed Reliability Engineering in order to be in the running. These actions, however, did not contribute much to real user satisfaction with the finished product.

The advent of the application of transistors to military equipment in the mid-1950's gave promise of considerably improved reliability over the use of vacuum tubes. Higher reliability passable components which were then on the market gave added encouragement.

Since the transistor circuitry occupied less space per function, there was immediately, however, a drive toward more complex systems which cancelled to a great extent the reliability improvements. The size and power reduction resulting from the use of transistors was not sufficient to employ redundant circuits for the improvement of reliability. Since the packaging was designed with access for maintenance a secondary consideration, overall system availability did not rise despite the reliability improvements. In part, these undesirable circumstances arose from a lack of definition in the purchase specifications on such items as maintainability, reliability, availability, cost of ownership, etc.

The development and practical availability of the digital microelectronic functional devices hold promise of realizing, on the technical side, desirable equipment characteristics and make reasonable the specification of such characteristics on the managerial side. On the one hand, the microcircuit, because of its manner of construction, has a very high inherent reliability. On the other, its size permits the use of redundancies for functional reliability improvement, better packaging for maintenance and several other *desiderata* for systems use.

The promise tendered by the application of the microcircuit for the solution of numerous equipment problems related to size, weight and reliability was sufficiently great to justify its use in several subsystem developments despite the high device cost at the time. Among these developments were the Sperry Loran-C, the Westinghouse Pathfinder Receiver, and the Naval Air Development Center One-Way Data Link.

Of these three subsystems, the Loran-C is the most sophisticated, and could well serve to illustrate the impact of microelectronics. Numerous comparisons have been made between the Microelectronic Loran-C and other Loran receivers fabricated in the pre-microelectronic era; however, these comparisons have emphasized relative weights, sizes and power required. The aspect which has received less attention is that the Loran-C is a completely new equipment in that it is automatic; no operator is required. If prior construction techniques were used to produce the equivalent of a Loran-C receiver, the comparisons would be impressive indeed. In this equipment we have an example of the application of automation achieved in an economical form together with the other advantages cited as a direct result of the existence of the microcircuit.

With the success achieved in the development of several avionic subsystems employing microelectronic techniques, with the cost reductions of the microelectronic devices themselves and with the experimental indication of vastly improved reliability, consideration was then given to the development of complete integrated avionic suits for classes of aircraft. By integration is meant "essential to completeness," a standard dictionary definition.

The first integrated avionics systems to be considered for development were the Integrated Helicopter Avionics System and the Integrated Light Attack Avionics Systems. The basic design philosophy of these systems concerns the achievement of maximum military effectiveness consistent with cost of purchase, cost of ownership, manpower, maintenance capabilities in terms of test equipment and manpower skills, etc. It is through the use of microcircuits that it is now possible to consider for aircraft the use of a complex digital computing system fed vastly greater amounts of information by sensors and providing outputs to actuators and displays. Such a computation facility takes over, in effect, some of the duties normally assigned to the aircraft crew, such as navigation.

For this function, as in many others, basic data are received from numerous sensors, evaluated, and the most probable processed data presented to the pilot or used to govern some actuator. This sort of process duplicates

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Capt. Stanziano has served in several assignments related to airborne electronics, primarily research, development, test, evaluation and fleet use. Prior to his present assignment, he was Navy Member of the Mutual Weapons Development Team in Paris, France. For his work as U.S. Member of the Steering Committee, NATO Maritime Patrol Aircraft, he was awarded the Medal for Aeronautics by the French Government.

in many features the functions that a man would perform in the absence of the computer. In this regard, the integrated system provides a high degree of automation of the functions of a military aircraft.

In addition, a complex of subsystems organized by a computation facility is a system in the true sense of the word. It is a combination rather than an aggregation of subsystems. The performance, system of effectiveness, or any other overall parameter of such a system can be meaningfully specified by a purchaser in the light of the military requirements. It is more significant, from a systems viewpoint, to specify the altitude band which an aircraft will fly when in the terrain following mode than to have described the details of the radar used in such a system.

From the point of view of the military equipment purchasing manager, the choice of a system depends on the selection of numerous parameters: some military and many non-military much akin to a business establishment. At one extreme of the spectrum, using only operational aspects, a system could be designed which would do the job assuredly but at a price that would not be supportable. At the other extreme, the cost would be small, but the probability of accomplishment of the military objectives nil. In many places between these two extremes there are peaks of military performance per dollar.

The choice of a system depends on this type of analysis but is influenced not only by a few but by a multiplicity of such parameters, including commonality across weapons systems lines which makes the problem one of considerable complexity. At the outset of such an analysis is the research and development cost amortized over the number of systems planned to be purchased which gives a purchase cost per system per unit time.

Now, competing systems must be compared with each other in military effectiveness and cost. Each of these parameters is in itself a complicated subject. Looking at the maintenance cost, there is a cost of spare parts, cost of personnel training, cost of test equipment and cost of personnel. A determination must be made of the relative worth of system self-test and to what depth relative to reliability of equipment, spare parts cost, cost of personnel training, systems availability, shop space on ships, etc.

Where such a determination is made (actually a whole manifold of such determinations must be made), the manner in which the purchase cost is influenced by various values in the manifold must be evaluated. Also, within each such manifold, there are subsidiary manifolds usually connected to other primary ones or there are overlaps of primary manifolds.

For example, reliability was mentioned under maintenance but various levels of reliability can be obtained by various schemes, such as redundancy, at a price. What this is worth relative to cost, availability and its influence on maintenance procedures must be evaluated relative to the whole situation, including the probability of completing a certain military mission. While the problem of system choice is theoretically a solvable problem, it is very complicated with many of the variables bounded and many whose value are only crudely known. As part of the solution, the influence of crudely known parameters must be determined to avoid spurious conclusions.

While the foregoing description of the mechanics of making a choice of system for a given set of avionics applications appears as suitable rationale, there remain several problems between the choice and specification of the system. Assuming a choice of system was made in an appropriate manner, the parameters which formed the basis of the selection are generally not those which an inspector can use for acceptance or rejection of either the system or its parts. Similarly, it is hardly feasible to engage the completed R&D system in a warfare situation upon prototype completion by the contractor to determine whether he has done a suitable job. Therefore, it is necessary to translate the criteria which led to the system choice into engineering measurables. Such measurables can be acted upon by either plant inspectors or by flight test personnel.

(Cont. on Page 13)

U.S. Army Basic Research Information Available

Statistics truly show that the sun never sets on the Army's basic scientific research activities. Individual grants and contracts awarded by the Army Research Office totalled over \$612 million for 1964 and represented 242 projects assigned to 161 institutions.

At far corners of the world and in its metropolitan centers a complicated research program essential to the arming and equipping of a modern U.S. Army is carried out in modest laboratories and at giant research complexes, each according to its capacity.

Institutions and organizations desiring information and guidance on obtaining grants or contracts for basic research are invited to address inquiries to the Army Research Office, 3045 Columbia Pike, Arlington, Va. Inquiries relating to research in the Mathematics or Physical Sciences areas should be addressed to the Army Research Office-Durham, Box CM, Duke Station, Durham, N. C.

ASPR Changes

(Cont. from Page 2)

- Promote the defensive strength of our allies, consistent with our political-economic objectives.
- Promote the concept of cooperative logistics and standardization with our allies.
- Offset the unfavorable balance of payments resulting from essential U. S. military deployment abroad.

1951-1962 Experience

During this ten-year period, the U. S. exported to its Allies military materiel and equipment valued at \$22 billion. About \$20 billion of this total was processed by the U. S. Government as part of the Military Assistance Program (MAP). More specifically, \$17 billion of that total was under the provisions of the Grant Aid Program and \$3 billion was accounted for by miscellaneous sales.

1961-1972 Forecast.

During this ten-year period, the U. S. desires to at least equal the total volume of military exports of the last 10 years. However, the recent sharp reductions in Grant Aid (MAP) will mean that \$15 billion or more must now be derived from sales instead of Grant Aid programs.

General Course of Action.

Attainment of the policy and financial objectives cited above will require a broad base of sales activity by defense industry in support of military exports which heretofore was not an essential requirement because of the high proportion of Grant Aid exports of military end items and their subsequent spares support by the U. S. Military Departments.

With the radical change in the ratio of sales to Grant Aid and the related changes in the character of export marketing in the pre-contract as well as the post-contract phases, both the U. S. Government and the U. S. industry found it necessary to enter into a wide range of new activities which include, but are not limited to, those characterized as "cost of sales" under the ASPR.

Government and industry sales efforts, with the expenditures related thereto, are often complementary in the pre-contract, production and post-delivery stages of the military export business. These factors must be taken into account when pricing the defense articles, accepting purchase orders and negotiating production contracts through Government military assistance sales channels, as set forth in ASPR 6-705.3.

Whenever possible, foreign countries are encouraged to negotiate and purchase directly from U. S. defense industry. However, in some cases foreign governments do not have their own procurement organization in the U. S. and have made U. S. Government procurement assistance a pre-condition to large dollar volume purchase from U. S. industry; in other cases, the countries have asked for such special assistance because they do not have the necessary trained and experienced procurement specialists.

RAdm. Sweeney Appointed Navy Deputy to Air Force F-111 Program Director



**RAdm. W. E. Sweeney,
USN**

Rear Admiral W. E. Sweeney, USN, was appointed by the Defense Department as Navy Deputy to the Air Force F-111 System Program Director, Brigadier General John L. Zoeckler. Admiral Sweeney will have primary responsibility for management of the F-111B, the Navy version of the two-service aircraft. Additionally, he will be the Navy Project Manager of the combined F-111B/Phoenix missile system program.

With the Air Force F-111A program moving into the production stage, the Navy version, the F-111B, remains as previously planned in the research and development stage. The important task of intergration of the F-111B and the Phoenix missile systems is still to be accomplished.

The augmentation will permit greater Air Force concentration on the important development and flight test programs already under way and facilitate production of the F-111A. At the same time, Navy management will be strengthened on the F-111B as it approaches the same important stage in its development.

Admiral Sweeney is a weapons engineering officer with extensive assignments in the area of aircraft design, armaments, electronics and missile tests. His most recent assignment was Deputy Department of Defense Representative in Europe and the Middle East for research, development and production programs for all Services, including NATO production of F-104G aircraft and Sidewinder, Bullpup and Hawk missiles. Earlier technical service included duty in the former Bureau of Aeronautics as Design Officer for World War II fighter aircraft and the first jet fighters produced for the Navy.

Admiral Sweeney is a graduate of the Naval Academy and has had three years postgraduate education in aeronautical engineering at California Institute of Technology and additional postgraduate education in management from George Washington University and Harvard Business School.

Air Force Awards Contract for Initial F-111 Procurement

The Department of Defense announced on April 12 that the Secretary of the Air Force approved the award of a letter contract to General Dynamics/Fort Worth covering initial procurement of 431 F-111 aircraft. This fixed price incentive fee contract covering multi-year procurement is expected, when definitized, to exceed \$1.5 billion. Funds totaling \$45 million were obligated to initiate the procurement of 10 aircraft and long lead time items to be used in 59 additional production aircraft.

Secretary of the Air Force Eugene M. Zuckert stated that the results of the research and development program to date give confidence that the F-111 will provide a superior airplane for both Navy and Air Force missions. The F-111A has flown at supersonic speeds and the wing sweep operation has become routine.

U.S. Navy Version of Bi-Service F-111 Jet



F-111B Wings Folded



F-111B Wings Extended

DEPARTMENT OF DEFENSE

Dr. Charles M. Herzfeld, Dep. Dir. of the Advanced Research Projects Agency (ARPA), has been selected to become Director of ARPA, upon the departure of Dr. R. L. Sproull expected about July 1, 1965. Dr. Herzfeld has been Dep. Dir. of ARPA since 1963, having first served in ARPA as Dir. of Ballistic Missile Defense beginning in 1961. Dr. Sproull became Dir. of ARPA in Sept. 1963. He will return to Cornell University, where he had been Dir. of the Materials Science Center from 1960, until his appointment to ARPA.

Dr. Robert A. Frosch, Dir. of Nuclear Test Detection for ARPA since 1963, has been selected to succeed Dr. Herzfeld as Dep. Dir. of ARPA.

Mr. Daniel J. Fink, Asst. Dir. of Defense Research & Engineering for Defensive Systems, has been selected to become Dep. Dir. for Strategic and Defensive Systems, effective May 1, 1965. He replaces Mr. Fred A. Payne, who has resigned to return to private industry.

RAdm. Luther C. Heinz, USN, will become Director of Military Assistance in the Office of Asst. Secretary of Defense (International Security Affairs), replacing Lt. Gen. Robert J. Wood, USA. He will report in June and will be advanced to the rank of vice admiral.

The following changes in assignment and retirements of key military personnel of the Defense Supply Agency (DSA) have been announced:

Maj. Gen. Donald L. Hardy, USAF, Commander, Defense Industrial Supply Center, Philadelphia, will retire on May 31. He will be succeeded by Brig. Gen. John M. Kenderdine, USA, currently Executive Dir. of Supply Operations at Hq., DSA.

Maj. Gen. Bruce E. Kendall, USA, now Executive Dir. of Logistics Services, Hq., DSA, will become Executive Dir. of Supply Operations. Gen. Kendall's successor will be announced at a later date.

Maj. Gen. Oliver C. Harvey, USA, Commander, Defense Clothing & Textile Center, Philadelphia, will become Commander of the new Defense Personnel Support Center in that city when it is established in July 1965. This activity will consolidate work now being done by the Defense Clothing & Textile Center, the Defense Medical Supply Center in Brooklyn, N. Y., and the Defense Subsistence Supply Center in Chicago, Ill.

Key staff appointments in the Military Traffic Management & Terminal Service (MTMTS), activated on Feb. 15, have been announced. They are:

RAdm. Emory D. Stanley, Jr., SC, USN, Dep. Commander for Operations; Col. Edward A. Guilbert, USAF, Acting Dep. Commander for Administration; Col. Richard K. Hutson, USA, Chief of Staff; Col. Paul P. Dailey, USA, Comptroller; Mr. Roland L. Guyotte, Jr., Dir., Office of Programs, Management & Systems; Col. Harry C. Archer, USA, Dir. of Military



ABOUT PEOPLE

Plans; Col. Ronald D. Bagley, USAF, Dir. of Freight Traffic; Capt. Stanley B. Freeborn, Jr., USN, Dir. of Passenger Traffic; Col. James E. Branigin, USA, Dir. of Household Goods; and Col. Ransome T. Looper, USA, Dir. of Terminals & Installations.

In addition to national headquarters in Washington, D. C., MTMTS has three Area Commands. Brig. Gen. Austin J. Montgomery, USA, is Commander, Eastern Area, MTMTS, Brooklyn Army Terminal, Brooklyn, N. Y. 11250. Capt. Grover F. Blankinship, Jr., SC, USN, is Commander, Central Area, MTMTS, St. Louis, Mo., 63177. Brig. Gen. Raymond C. Conroy, USA, is Commander, Western Area, MTMTS, Oakland Army Terminal, Oakland, Calif., 94626.

Col. Robert V. Herbold, USAF, has been assigned as Comptroller, Defense General Supply Center, DSA, at Richmond, Va.

Col. Benjamin Widmann, USAF, has been assigned to the Defense Communications Agency as Chief, Data Processing Div.

ARMY

Lt. Gen. Ben Harrell, presently serving as the Asst. Chief of Staff for Force Development, has been named to succeed Lt. Gen. Dwight E. Beach as Commanding General, U. S. Army Combat Developments Command. Gen. Beach will become Commanding General, Eighth United States Army; Commander, United States Forces, Korea; and Commander-in-Chief, United Nations Command.

Lt. Gen. Theodore J. Conway, Dep. Commanding General, Eighth U. S. Army, Korea, has been appointed Asst. Chief of Staff for Force Development to replace Lt. Gen. Harrell.

Brig. Gen. John C. Dalrymple, currently Div. Engineer for the U. S. Army Engineer Div., North Atlantic, will become Dir. of Military Construction in the Office of the Army Chief of Engineers, effective July 1, 1965. He will succeed Maj. Gen. Frederick J. Clarke, who has been named the Commanding General, U. S. Army Engineer Center and Commandant, U. S. Army Engineer School. Col. A. P. Rollins, Jr., the Dep. Dir. of Military Construction, will assume additional duty as Special Asst. to the Chief of Engineers for NASA Support, effective June 1, 1965.

Brig. Gen. Roger M. Lilly has been assigned as Commanding General, Command Control Information Systems (CCIS) Group, U. S. Army Combat Developments Command.

The Army Materiel Command has announced the appointment of the following project managers:

Col. H. F. Foster, Jr., Project Manager for the European Tropospheric Scatter System—Army (ETA). Col. Foster, who is stationed at Ft. Monmouth, N. J., is also Project Manager for UNICOM/STARCOM.

Col. John E. Schremp, Project Manager, of the newly established project office for Night Vision, located at the Engineers R&D Laboratories, Ft. Belvoir, Va.

Col. James H. Schofield, Jr., former AMC AN/VRC-12 and AN/PRC-25 Project Manager, has been redesignated Selected Tactical Radios Project Manager. In addition to the VRC-12 and PRC-25, Col. Schofield assumes responsibility for the AN/RCS-106, -108, -122 and -142, and the AN/VSC-2 and -3. The project office is located at Ft. Monmouth, N. J.

NAVY

RAdm. Richard R. Pratt, Commander, Amphibious Group THREE, will relieve RAdm. Robert H. Weeks as Director, Communications & Electronics, Joint Staff, Commander in Chief Europe, in July. Admiral Weeks is being assigned to Washington as Asst. Chief of Naval Operations for Communications, replacing RAdm. Bernard F. Roeder.

RAdm. George W. Pressey, Commander, Amphibious Group TWO, has been ordered to Pearl Harbor as relief for RAdm. Luther C. Heinz as Asst. Chief of Staff, Foreign Military Aide, Logistics & Administration, on the staff of the Commander in Chief Pacific. Admiral Heinz will become Director of Military Assistance in the Office of the Secretary of Defense in June.

AIR FORCE

The following general officer nominations have been announced by the USAF:

To be major general: Brig. Gen. Gilbert L. Pritchard, Commander, USAF Special Air Warfare Center; Brig. Gen. Robert R. Rowland, Chief, Air Section, MAAG Vietnam; Brig. Gen. Otto J. Glasser, Vice Commander, Electronic Systems Div.; Brig. Gen. Emmett M. Tally, Jr., Dir. of Supply, Air Force Logistics Command; Brig. Gen. David M. Jones, Dep. Associate Administrator for Manned Space Flight, NASA; Brig. Gen. Harry J. Sands, Jr., Commander, Ballistics Systems Div.; and Brig. Gen. John L. Zoeckler, System Program Dir., F-111, Aeronautical Systems Div.

To be brigadier general: Col. Wm. L. Hamrick, Dep. Commander, San Bernardino Air Materiel Area; Col. Alvan N. Moore, Dep. Dir. of Forces, Dir. of Aerospace Programs, DCS/Programs & Requirements, Hq., USAF; Col. Guy H. Goddard, Civil Engineer, Air Force Logistics Command; Col. Clifford J. Kronauer, Jr., Asst. Dir. for Ranges & Space Ground Support, Office, Director of Defense Research & Engineering; Col. George

(Cont. on Page 23)

(Cont. from Page 3)

time. A detailed cost breakdown can be relegated to an appendix.

Beyond the body of the proposal come the various appendices referred to in the proposal. Even if having only general reference in the body of the proposal, any information or photographs that will demonstrate ability to undertake the work should be presented.

Basis for Evaluation by the Army.

DOD procurement practices are governed by the Armed Services Procurement Regulation (ASPR) and the basic rules for evaluating R&D proposals are spelled out in this regulation. The item of primary importance is the *technical superiority of the proposal*. All the résumés, annual reports, leather-bound covers and three-color overlays in a proposal cannot be expected to sway the evaluator's opinion of the technical presentation. The submitter *must* demonstrate (1) that he understands the problem fully and (2) that he has a well thought out approach which shows signs of promise if executed as described.

On many occasions, proposals have been rejected as a result of submitters underrating the importance of technical superiority of a proposal. In any proposal, revolutionary ideas that offer the possibility of significant scientific breakthroughs are attractive. However, even old, well-established approaches have won contracts. This is particularly true where the reasons for previous failure of these approaches are analyzed, adequately investigated and a new and promising solution proposed.

A clear understanding of the ultimate needs of the Government agency for whom the work is proposed will also assist in proposing attractive approaches. Often before preparing a proposal it may be helpful to discuss the matter with representatives of the agency concerned. If a proposal involves the development of a material that will be used in large quantities, then what will be the effect of an approach based on material in very short supply? In many instances, the availability of material may have a decided effect on a given approach. Similarly, if a submitter has done his homework properly, he may find that the agency itself has done some work on the approach the submitter has in mind, and may have some very definite ideas about it.

A technical evaluation of a proposal may sometimes be performed on the basis of the technical portion of the proposal alone. Cost information will be deliberately denied to the technical evaluator to prevent this from influencing his decision. He is asked to rate a proposal into two broad classes, acceptable and unacceptable. He is then required to state reasons for unacceptability and/or acceptability. Only then may cost data be brought into the picture. On the other hand, a proposal may be evaluated taking into consideration both technical and cost factors at the same time. Upon completion of the evaluation, the submitter will be informed as to whether the Government is interested in supporting his proposal, or his proposal will be rejected. Sometimes the technical results of the evaluation will be provided; other times only a statement of "no interest" or "lack of potential benefit to our R&D programs" may constitute the rejection. In any event, the length of the reply does not constitute the measure of the evaluation. *Every* proposal is carefully and thoroughly evaluated by highly competent personnel in the field or fields involved in the proposal.

Where to Submit a Proposal in the Army.

Proposals should be submitted, in triplicate, to the appropriate major subordinate command or agency of the Army Materiel Command (AMC) concerned with the work proposed; or, if this cannot be readily determined, to:

Commanding General
U. S. Army Materiel Command
Attn: AMCRD-SS-P
Washington, D. C. 20315

AMC has seven separate major subordinate commands. They are:

- U. S. Army Electronics Command
Ft. Monmouth, N. J.
- U. S. Army Missile Command
Huntsville, Ala.
- U. S. Army Mobility Command
Warren, Mich.
- U. S. Army Munitions Command
Dover, N. J.
- U. S. Army Supply & Maintenance Command
Washington, D. C.
- U. S. Army Test & Evaluation Command
Aberdeen, Md.
- U. S. Army Weapons Command
Rock Island, Ill.

Each of these commands has numerous sub-commands, laboratories, installations and activities under its jurisdiction.

Then there are the separate activities and laboratories reporting directly to AMC headquarters:

- Army Ballistics Research Laboratory
Aberdeen, Md.
- Army Materials Research Agency
Watertown, Mass.
- Armed Forces Food & Container Institute
Chicago, Ill.
- Coating & Chemical Laboratories
Aberdeen, Md.
- Cold Region Research & Engineering
Hanover, N. H.
- Harry Diamond Laboratories
Washington, D. C.
- Human Engineering Laboratory
Aberdeen, Md.
- Natick Laboratories
Natick, Mass.
- Satellite Communications Agency
Ft. Monmouth, N. J.
- Nuclear Defense Laboratory
Edgewood, Md.

The names of the major commands and separate activities are synonymous with the commodity or function for which they are responsible with the exception of the following:

- Mobility Command—Responsible for aeronautical and aerial delivery equipment, surface transportation, power generation, construction, surface barrier and bridging, general purpose vehicles and general support equipment and supplies.
- Harry Diamond Laboratories—Responsible for basic and applied research in the fields of radiating or influence fuzing, time fuzing (electrical, electronic, decay, or fluid), and selected command fuzing for target detection, signature analysis and the target intercept phase of terminal guidance.
- Natick Laboratories—Responsible for research and development in the physical, biological and earth sciences, and engineering to meet military requirements in the commodity areas of textiles, clothing, body armor, footwear, organic materials, insecticides, fungicides, subsistence, containers, POL handling and dispensing equipment, materials handling equipment, food services equipment, field support equipment, tentage and equipage and air delivery equipment.



MEETINGS AND SYMPOSIA

MAY 1965

Technical Information Symposium, May 26-27, at Statler-Hilton Hotel, Los Angeles, Calif. Co-sponsors: DOD and National Security Industrial Assn. The objective of the conference is to make top management aware of what is involved in technical information, the efforts under way by DOD to solve existing problems and the need for dynamic leadership in the management of technical data and information. Contact: National Security Industrial Assn., 1030 15th St. NW, Washington, D. C. 20005, telephone (Area Code 202) 296-2266.

JUNE & JULY 1965

Research & Development Cost Seminar in Chicago, June 2-4; New York, June 8-10; San Francisco, June 14-16; Los Angeles, June 16-18; and Boston, June 29-July 1. Sponsor and

contact: The National Defense Education Institute, 11 Arlington St., Boston, Mass. 02116, telephone (Area Code 617) 267-5132. The seminar is designed to afford participants the opportunity for intensive scrutiny of a broad spectrum—today's R&D "cost context"—and of the key areas within it—cost/effectiveness analysis, cost estimating, cost tracking.

Advanced Incentive Contracting Seminars in Washington, D. C., June 15-17; Los Angeles, June 21-23; Denver, June 24-26; Cleveland, June 29-30-July 1; and Boston, July 7-9. Sponsor and contact: The National Defense Education Institute, 11 Arlington St., Boston, Mass. 02116, telephone: (Area Code 617) 267-5132. The two-day seminars (preceded by one-day optional briefing) are designed to demonstrate—practically and clearly—the latest advances in incentive techniques.

Conference on Small-Angle X-Ray Scattering, June 24-27, at Syracuse University, Syracuse, N. Y. Sponsors: Department of the Army, Syracuse University Research Institute. Contact: Maj. Lawrence P. Monahan, Jr., U. S. Army Research Office—Durham, Box CM, Duke Station, Durham, N. C. 27706, telephone (Area Code 919) 286-2285.

Relaxation Techniques in Chemical Kinetics, June 28-30, at State University of New York, Buffalo, N. Y. Sponsors: Air Force Office of Scientific Research, American Chemical Society and State University of New York. Contact: Dr. Ralph G. Wilkins, Department of Chemistry, State University of New York, Buffalo, N. Y., telephone (Area Code 716) 831-3905.

Second Interdisciplinary Conference on Electromagnetic Scattering (ICES-II), June 28-30, at Amherst, Mass. Sponsor: Air Force Cambridge Research Laboratory, L. C. Hanscom Field, Bedford, Mass., telephone (Area Code 617) CR 4-6100, Ext. 3633.

Civil Defense Defense Industry Obligation

Defense industry has a special obligation to prepare for the survival of its facilities, its forces and its production capabilities, Director of Civil Defense William P. Durkee, Office of the Secretary of the Army, points out.

Mr. Durkee emphasizes the fact that survival preparations must always be made locally—at the plant and in the community. Executives in defense industry must take the initiative and carry the basic responsibility for ensuring their own survival and that of their employees in case of an attack on the United States. Government can and will provide guidance and technical assistance, but the management of industrial facilities must in the final analysis make its own plans and preparations according to its own particular requirements.

Defense industry should address itself, first of all, to the basic matter of preparing shelters for its employees. In particular:

- Cooperation should be given to the local government in the Fallout

Shelter Survey, Marking and Stocking Program. All buildings should be surveyed and have their protection factors assessed by the architects and engineers under contract with the Army Corps of Engineers or the Navy Bureau of Yards and Docks. If the buildings meet Federal criteria and are needed for public shelter, the Federal Government will mark and stock such shelters at no cost to the owner.

- To the extent possible, agreements should be made with local and Federal Government agencies to allow public use of shelter space that meets Federal protection criteria when needed. This requires signing of the "Fallout Shelter License or Privilege" Form.

- If it is discovered, either through the Government survey or an independent one, that a company's building does not offer adequate fallout protection, arrangements should be made to improve them by making minor improvements to upgrade shelter space or increase the number of

people they can accommodate. The local civil defense director can provide information regarding architects and engineers who are qualified in fallout shelter analysis.

- Fallout shelters should be included in the design of all new plants and structures. The local civil defense director can arrange to secure technical assistance for incorporating protective features into the design of new buildings at little or no additional cost.

- Employees should be urged to arrange to protect themselves and their families if an attack should come at night or on a holiday when they are not at the workplace—either by preparing home shelters or by assuring that they and their families know the location of community shelters in their respective neighborhoods. Industry can make a great contribution to the national shelter program by providing its employees with guidance and assistance in preparing and stocking home or community shelters.

CALENDAR OF EVENTS

June 5: Capabilities of Army Aircraft Demonstration, Ft. Sill, Okla.

June 6: Anniversary of Army Aviation.

June 7-11: National Strategy Seminar, Carlisle Barracks, Pa.

June 7-13: NATO Conference SHAPEX 1965, Paris, France.

June 10-16: Global Strategy Seminar, Norfolk, Va.

June 13-17: Ocean Science & Ocean Engineering Conference & Exhibit, Washington Hilton Hotel, Washington, D. C.

June 14: 190th Birthday of U. S. Army.

June 14-16: American Marketing Assn. Conference, New York, N.Y.

June 14-18: American Institute of Architects Convention, Washington, D.C.

June 14-July 2: Defense Strategy Seminar, Ft. McNair, Washington, D.C.

June 15-17: Sheet Metal & Air Conditioners Contractors Conference, Philadelphia, Pa.

June 16-18: Aviation Distributors & Manufacturers Association Conference, Colorado Springs, Colo.

June 16-19: Society of Nuclear Medicine Convention, Miami Beach, Fla.

June 20-26: Communications Workers of America Convention, Kansas City, Mo.

June 21-23: The Institute of Navigation Annual National Meeting, Edgewater Inn Marina Hotel, Long Beach, Calif.

June 21-25: American Newspaper Publishers Convention, Chicago, Ill.

June 21-25: International Council of Industrial Editors Conference, San Francisco, Calif.

June 22-26: National Press Photographers Conference, Houston, Tex.

June 26-29: Advertising Federation of America Conference, Boston, Mass.

June 28-30: Association of Iron & Steel Engineers Conference, Salt Lake City, Utah.

June 29-July 2: Data Processing Management Association Convention, Philadelphia, Pa.

DSA Regulation

Covers Production Testing

The Defense Supply Agency is giving increased attention to production testing in order to assure that the products of research and development procured by the Agency meet all design, configuration, quality and reliability requirements, and that they are procured at the lowest sound competitive cost. This can best be achieved when the item to be procured is adequately described by a specification which has been fully production tested to minimize production costs, eliminate "gold plating" and encourage the widest possible industry participation.

DSA Regulation 4125.1, "Production Testing of DSA Managed Items," covers the production testing of clothing, textile and subsistence items. The regulation provides that clothing, textile, subsistence and medical items which have been newly developed, or which have undergone a major change, will be tested for producibility. For all other items assigned to DSA Centers for supply management, the regulation allows for testing only at the request of the Military Services.

The Procurement and Production Directorate in the cognizant Supply Center is responsible for monitoring production tests and coordinating with other Directorates and the Military Services to assure:

- That restrictive production elements are eliminated from specifications.
- That standard commercial production practices are followed, insofar as practicable, to enhance competition.
- That the item can be manufactured in economic production quantities.
- That the specification is analyzed for value under the value engineering/analysis program.
- That the quality assurance provisions are compatible with normal industrial practices and provide for an item of specified quality, efficiently and economically.
- That a broad industrial base for current procurement and industrial mobilization planning is provided.

NOTICE

Due to the gratifying response of industry in requesting copies of the *Defense Industry Bulletin*, we are having difficulty keeping up with our distribution. If your company is one of several thousand which has requested the *Bulletin* during the past three months and has just started to receive copies, we thank you for bearing with us. We are honoring all requests as rapidly as possible.

Additionally, if your company would like to see some area of Department of Defense policy or activity covered in the *Bulletin*, please let us know. We welcome your suggestions.

The Editors.

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APRIL 1965							MAY 1965							JUNE 1965						

SPEAKERS CALENDAR

OFFICE OF THE SECRETARY OF DEFENSE

Hon. John T. McNaughton, Asst. Secretary of Defense (International Security Affairs), at National Interdepartmental Seminar, Foreign Service Institute, Arlington, Va., May 25.

Maj. Gen. William J. Ely, USA, Dep. Dir. of Research & Engineering (Administration & Management), at National Security Industrial Assn. meeting, Los Angeles, Calif., May 26.

Maj. Gen. W. S. Steele, USAF, Dep. Commandant, Industrial College of the Armed Forces, at Northern Oklahoma Junior College Commencement, Tonkawa, Okla., May 30.

Dr. Shirley Fisk, Dep. Asst. Secretary of Defense (Health & Medical), Office of Asst. Secretary of Defense (Manpower), at SHAPE Medical Conference, Paris, France, May 31-June 2.

Gen. E. G. Wheeler, Chairman, Joint Chiefs of Staff, at Air War College, Maxwell AFB., June 2.

ARMY

Mr. William P. Durkee, Dir. of Civil Defense, at National Fire Protection Assn. Annual Meeting, Washington, D.C., May 21.

Lt. Gen. L. J. Lincoln, Dep. Chief of Staff for Logistics, at DOD/Logistics/R&D Conference, Warrenton, Va., May 26 (Appearance only).

Gen. Harold K. Johnson, Chief of Staff, USA, at Military Government Assn. Convention, Portland, Ore., May 29.

Brig. Gen. Harry G. Woodbury, Dep. Dir. for Comprehensive Planning, Office of Dir. of Civil Works, at Carnegie Institute of Technology ROTC Commissioning, Pittsburgh, Pa., June 7.

Maj. Gen. William R. Peers, Asst. Dep. Chief of Staff for Military Operations, at Civil Affairs Convention, New York, N.Y., June 12-13.

NAVY

RAdm. H. L. Miller, Commander Carrier Div. Three, at Naval Air Station, Lemoore, Calif., May 25.

RAdm. C. B. Jones, Chief, Office of Legislative Affairs, at Assn. of the U. S. Army Southern Colorado Chapter Meeting, Pueblo, Colo., June 7.

Hon. Paul H. Nitze, Secretary of the Navy, at Naval War College, Newport, R. I., June 10.

Hon. R. W. Morse, Asst. Secretary of the Navy (Research & Development), at Marine Technology Society & The Society of Limnology & Oceanography Meeting, Washington, D. C., June 14; at 4th Biennial Navy Tripartite Symposium, Annapolis, Md., June 23.

AIR FORCE

Gen. B. A. Schriever, Commander, Air Force Systems Command, at USAF Academy, Colo., June 7.

Gen. J. P. McConnell, Chief of Staff, USAF, at Honor Squadron Dinner, USAF Academy, Colo., June 5; at University of Akron, Akron, Ohio, June 7; at USAF Academy Graduation, June 8-9.

Lt. Gen. W. A. Davis, Vice Commander, Air Force Systems Command, at Massachusetts Institute of Technology, Cambridge, Mass., June 10.

Hon. Leonard Marks, Jr., Asst. Secretary of the Air Force (Financial Management), at Blair Academy, Blairstown, N. J., June 5; at Stanford University, Palo Alto, Calif., June 12.

Brig. Gen. E. A. Pinson, Dep. Commander, Office of Aerospace Research, at Aerospace Research Laboratories Symposium, Wright-Patterson AFB, Ohio, June 14.

Maj. Gen. B. I. Funk, Commander, Space Systems Div., AFSC, at American Institute of Aeronautics & Astronautics Meeting, Colorado Springs, Colo., June 17.

DASA Conical Shock Tube Facility Contract Awarded

A defense contract for \$2,300,000 has been awarded to Sun Shipbuilding Co., Chester, Pa., for construction of a conical shock tube air blast simulator. Sponsored and funded by the Defense Atomic Support Agency (DASA), the DASA Conical Shock Tube Facility (short title, DASA-CON) will be located on the grounds of the Naval Weapons Laboratory, Dahlgren, Va. It is believed to be the largest facility of its kind in existence.

DASACON will measure nearly one half mile in length, tapering from 16 inches to 24 feet in internal diameter along its conical shape. When completed, it will enable DOD scientists to study the air blast effects of a simulated 20-kiloton nuclear blast using a 1000-pound conventional high explosive charge.

Of particular interest to DASA scientists is a "high altitude" blast simulation capability. A diaphragm sealing off the conical tube at one of the test stations allows evacuation of air to a partial vacuum simulating altitudes of about 100,000 feet. Measurement of blast effects at this simulated altitude can provide answers to some questions which otherwise would require expensive and highly complex underground test preparations.

Military construction, expected to be completed in October 1966, is under supervision of the Navy's Bureau of Yards and Docks. Projects developed for the facility will be conducted under the technical management of the Bureau of Ships, subject to final approval of DASA.



Artist's Concept of the DASA Conical Shock Tube Facility

Commodity Managers: Their Role in the Army's Supply System

by

Brigadier General Donald G. Grothaus, USA

The world's largest supply business is directed by the U.S. Army Supply and Maintenance Command's (SMC) Supply Directorate. The enormity of its day-to-day operations in inventory control and warehousing becomes apparent only when one realizes that the yearly transactions of the Supply Directorate dwarf the annual combined mail-order business of Sears Roebuck and Montgomery Ward.

The Commodity Managers are the men who make this gigantic system work. The Army has 2,700 of these experts; they are the vital links in the vast logistical operations of the entire Army. Their decisions control a large share of the Government's investment in materiel, both of major items like a tank "shell" and secondary items like the tank engine, tracks, et al.

The variety of secondary items or repair parts handled, for which SMC is responsive, is impressive. For Army aircraft, for example, they vary from engines for helicopters and fixed-wing aircraft to the smallest component, like a transistor, that also plays a vital role "keeping the planes flying."

The Commodity Manager has to have extensive knowledge of some 675,000 separate items of the Army worth \$1.8 billion. These repair parts range from tank engines to watch springs. To take just one portion of this program, sales of Army-managed repair parts to friendly nations under the Mutual Security Program have totalled some \$161 million for fiscal 1965.

The Commodity Manager's job is to determine the equipment and repair parts required to maintain the peace or insure victory in war. He meets many challenges. He has to be not only a "generalist" who has a solid understanding of complex military systems and equipments, but also a specialist on costly repair parts. For example, the Commodity Managers assigned to the Army Missile Command are responsible for management of missile repair parts. Each Commodity Manager must have extensive knowledge of the complete missile system and its contribution to the "big picture." And, of course, it's often the smaller component parts that give the Commodity Manager their biggest headaches because there are so many of them.

Because of concern about gaining increased recognition and motivation for Commodity Managers, the SMC is inaugurating a career-management program expressly for their training and subsequent government careers. This offers all those interested in the supply end of the logistics business unique opportunities. For example, the career-management status provides schooling and unusually rapid promotional opportunities as a part of the program. Thirty men a year will be selected to train in this newly proposed program.

The men we are interested in must have a number of executive qualities that show real management potential. Good judgment is a quality that must rank at the top of the list. The Commodity Manager must possess the ability to correctly evaluate mountains of information, to be alert to changing developments—like international events over which he has no control, to be tactful in dealing with other people and to have outstanding ability in communicating with others. Educational attainment, in itself, is not enough. While a college education or its equivalent is required, we are more interested in the trainees possessing the above qualities and offering a solid long-range potential of real management value.

Another vital quality that we look for is flexibility. The Commodity Manager has to deal with many groups of specialists: two important customers other than the Army itself—the Air Force and the Navy—as well as many groups of specialists, like maintenance experts, engineers, procurement people, depot maintenance people and contractor personnel. The Commodity Manager's flexibility is given a severe test because he has to deal with the logistics problems of all three services on a world-wide basis. These demands are constantly changing, in ways that present a real challenge to the Commodity Manager's ability to anticipate a wide variety of political as well as economic factors. One Commodity Manager puts it this way: "You have to be 'loose in the saddle' on this job. You also have to have the ability to work under a lot of pressure."

While these managers do no procurement on their own, the procurement officers use their recommendations in their ultimate decisions. Decisions like these sometimes puts the Commodity Managers right "in the middle" of things. They do not want to overstock, yet they must above all see to it that the troops in the field are fully equipped. This calls for an adroit judgment. What with the varying demands made upon the Army by changing world-wide factors—some of which are virtually impossible to foresee—their jobs present a continuing challenge.

An exacting selection process, including the Federal Service Entrance Examination, determines the 30 trainees who will train as Commodity Managers each year. Then follows a period of intensive training, including on-the-job and scholastic training, that provides the successful candidates an opportunity for a grade increase each year. Thus the successful trainees who first started as a General Schedule (GS) 5 will progress to GS 7—a 20 per cent salary increase in only three years. Then the trainee has the opportunity to attain GS 8, just as long as he continues to progress and show initiative.

The intermediate training stage for Commodity Managers of GS 9-11 follows, and extends his training to include courses in a variety of human-relations and work skills. Then comes the senior level of GS 12-14 positions, when the regular job is implemented by courses in the technology of administration. The top executive level is reached with GS 15 and up (\$16,460 a year up), when top-level management courses equivalent to those of university graduate schools of business administration are offered the Commodity Managers. When they have reached

Brig. Gen. D. G. Grothaus,
USA
Director of Supply
U.S. Army
Supply and Maintenance
Command



this level, they are really big-time executives in the broadest sense of that term.

Now for a few examples that will convey the scope of the operations of the Commodity Manager. The dollar value of the repair parts they provide for the maintenance of U.S. forces world-wide amounts to \$519 million in fiscal 1965 (on a projected basis). When this is added to the total sales of Army-managed repair parts to friendly nations, the volume of Uncle Sam's dollar involved aggregates \$680 million a year. To obtain the necessary materiel to support this large sales program, the Commodity Managers initiate procurement actions that have already amounted to \$600 million this fiscal year.

Within the Army aviation commodity area, for example, some \$401 million of repair parts is included in inventory on hand. Estimated issues for this fiscal year will total about \$315 million. Furthermore, an estimated \$157 million is planned for procurement—an area in which the Commodity Manager plays an influential role. In addition, these Commodity Managers service major and repair parts operations for more than 4,000 helicopters and some 3,000 airplanes. These aircraft can, of course, function only as efficiently as they are supported with major assemblies and with repair parts.

In computing his various requirements, the Commodity Manager must be constantly analyzing the overall picture, and must instinctively know how to work with certain basic facts about SMC's operational areas. For example, he must know that, of the 24 depots commanded by SMC, there is a total of 93 million square feet of open storage space. He must know these and a host of other facts, so that he can make the proper recommendation for storage of the numerous repair parts provided by SMC.

For another illustration, let us take the M-60 medium tank. The Commodity Managers for this tank must know a host of facts. They must know the original cost of this tank. The Commodity Manager for the repair parts must be familiar with several thousand such items. He must be familiar with the cost of the original engine, transmission, rangefinder, track and road wheels, telescope and the countless other repair parts that make up the tank. When the original cost of the repair is totalled, that total makes up most of the original cost. Then, when the repair parts have to be reprocurd several years after the tank was originally assembled, their costs have skyrocketed because retooling has to be initiated all over again for production.

The Commodity Managers, then, are the key men who make the Army's entire supply system work. They are men who directly affect the readiness posture of our military forces world-wide. They plan a determining role in the Department of Defense's huge investment in materiel. The Commodity Managers for the Army are handling their responsibilities in a highly commendable manner. The Army owes its Commodity Managers the very highest praise.



UH-1B Iroquois helicopters, a segment of U.S. Army operations supported by the Supply and Maintenance Command supply system.

Systems Command Assumes Atlas Missile Command Responsibility

The phase out of the Atlas weapon system from the Strategic Air Command's (SAC) operational inventory has resulted in the Air Force Systems Command (AFSC) assuming responsibility for checkout and launch of Atlas missiles at Vandenberg AFB, Calif. All future Atlas launches into the Air Force Western Test Range in support of the U. S. Army Nike anti-missile program and the U. S. Air Force Advanced Ballistic Re-entry Systems (ABRES) program will be conducted by the AFSC's 6595th Aerospace Test Wing.

The change, which became effective on March 22, 1965, involves some 500 missile technicians and launch crew members from the SAC squadron who were transferred to the Aerospace Test Wing. Also transferred were three gantries, Atlas launch pads, three above-ground coffin-type Atlas sites, an Atlas D Radio Guidance Station, a missile assembly and maintenance shop and other technical facilities. Three of the launch pads, originally used for the Atlas D, will be modified to launch Atlas E and F models as well.

Many of the ICBM's used in the specialized programs will be those being removed from SAC operational bases. Their use in the specialized programs will be part of an Air Force plan to realize maximum value from ICBM's slated for phase out from the deterrent force.

The new ABRES and Nike Target vehicle launch team will be under the direction of Colonel Robert C. Thompson, the 6595th's Deputy for Ballistic Systems, and Lieutenant Colonel Phillip R. Safford, chief of the Atlas Project Office.

Microelectronics

(Cont. from Page 5)

Measurements of this kind should form a part of the specification for the system and, indeed, can be used during all phases of development to determine the progress of the system project. If the contract includes penalties and incentives, these measurements should form a part of the plan. Most of the measurables and their influence will generally be contained in the analysis which led to the system choice. The selection of a reasonable number of proper measurables requires an insight into the systems engineering and military use of the system.

The successful harnessing of the microcircuit technology to avionic equipment, as exemplified in the Sperry Loran-C, opened the road to truly integrated systems design. The small size and low cost circuitry make feasible complex equipment. High inherent reliability and higher system reliability by use of redundancy make complex systems attractive. It is now possible to design for ease of maintenance by personnel of little training. The systems designs now contemplated are complex to the point where, if a failure does occur, the degradation is graceful. In short, the microcircuit has raised the systems complexity to a new plane with a potentially higher effectivity.

A complex system brings forth system problems which were not previously prominent and which are germane to systems selection. These problems, in turn, make potent the need for more purely objective criteria for acceptance or rejection of the finished product. Modernized treatment of the design of systems demands that recognition be given to such factors from the very beginning in order to insure the broadest base of commonality and its related and overriding factor of true weapons systems cost effectiveness, both service and inter-service wide.

- His task is finite in duration; after the project is completed the personnel directly supporting it can be assigned to other activities.

- The project manager manages a higher proportion of professional personnel; consequently, he must use different management techniques than would be found in the more simple superior-subordinate relationship. The work situation for the individuals involved in the project is fluid; the project can be cancelled and more opportunity exists for the individual employee to feel uncomfortable and insecure than would be found in a more stable functional work situation. The project manager's attitude regarding the functions of management (planning, organizing, directing and controlling) must be augmented by increased factors of motivation, persuasion and human relations since he must have the support of people that many times are paid and promoted by someone in the functional element.

- The project manager has no *line* authority per se but rather depends on other manifestations of authority to bring about the attainment of the objective. The directing function is of somewhat less importance since the directing he does is, for the most part, accomplished through the functional managers who support him in the project endeavor.

The project manager provides a unifying force; without such a force two alternatives are suggested: (1) the project activities remain functionally separated with the risk of lack of unanimity of objective or, (2) the senior executive of the organization performs the project integration. Neither choice is acceptable since by nature functional managers are provincial (as would be expected) and the senior executive is concerned with overall support of all projects as well as the responsibility of long-range planning in terms of future products, finances, facilities, etc.

Authority and Responsibility of the Project Manager.

Authority is the legal or rightful right to command, to act, or to direct. Authority is *de jure* in the sense that it exists by rightful title, i.e., specific delegations of the authority of an organizational position are contained in the unit's documentation such as in policy and procedural instruments, job descriptions and organizational charters.³ Additional authority, *de facto* in nature, is exercised by a manager and is of an implied nature. Implied authority is the intrinsic and necessary power to discharge fully the responsibilities inherent in the task or job. Thus, an organization receiving public funds has *de facto* authority to create administrative policy stipulating how the funds will be maintained, obligated and safeguarded. Other aspects of *de facto* authority include the project manager's persuasive ability, his rapport with extra-organizational units and his capability in resolving opposing viewpoints with the parent unit and between the external organizations.

The senior executive of the organization still retains organic authority, responsibility and accountability for the results produced by the organization. The line executives share their authority with the project manager with respect to the project under development or production;

³ Within the Air Force, specific and forceful authority has been delegated to the project manager (The System Program Director) in AFR 375-3, dated 25 November 1963. Additionally, a draft DOD directive, titled "System/Project Management," (undated), is being coordinated within the Defense Department. This document reflects the delegation of authority to the Project Manager and will, when fully implemented, significantly strengthen the project manager's role.

⁴ Functional authority is defined as the legal right to act or command with respect to specific activities, processes, practices or policies in departments other than the manager's parent department. It is a small slice of the authority of some line manager and relates to particular phenomena in the organization, e.g., the authority of the personnel officer to prescribe certain grievance procedures. The project manager's authority vastly exceeds any that could be delegated using the concept of functional authority.

it is debatable whether the authority that the project manager exercises is *line* authority per se since his authority extends horizontally and vertically in the parent organization and radiates outside to participating organizations.⁴ A new concept of authority emerges with the advent of the project manager, viz., *Project Authority* which appears as the nearest thing to line authority that can be delegated to the project manager within the restraints of contemporary organizational theory. Project management changes the authority relationship since a line functional manager (such as a production manager) is now required to provide advice, counsel and specialized support to the project manager, who is concerned with project integration. Thus one sees beginning evidence of departure from the line-staff organizational dichotomy that has been in the mainstream of management theory for decades. Project authority provides the legal basis for the unification of organizational deliberations both within the organization itself and with respect to outside organizations. Traditional authority tended, for the most part, to be operable only within the parent organization.

Additional factors that lend credence to the *project authority* doctrine include:

- Influence in the rank, organizational position or specialized knowledge of the incumbent. The project manager has superior knowledge of the relative roles and functions of the individual parts of the project, thus placing him in a logical position to exercise a heavy hand in major organizational decisions affecting the outcome of his project. His knowledge (by virtue of being in a focal position) inherently gives him knowledge superior to that of the personnel responsible for any subsystem or subactivity functioning as part of the integrated whole.

- The priority and obligation existing within the organization for the timely and efficient attainment of the project objectives.

- The existence of a bilateral agreement with a contracting party for the completion of the project within defined parameters (cost, performance, schedule and technology).

- Integrative requirements of the project manager's position in the sense that he has the singular responsibility within the organization to coalesce and direct separate functional and extra-organizational activities to a coordinated goal.

- The project manager's authority and responsibility flow horizontally across the vertical superior/subordinate relationships existing within the functional organizational elements.

- Explicit delineation in the organizational policy instruments is required to enable his active participation in the major managerial and technical activities involved in the project.⁵

Management literature has neglected any real definition or discussion of the authority of the project manager, probably because of the near universality of the functional approach to management education and practice. Until contemporary management theory has fully accepted the project manager's role, extraordinary manifestations of authority will be required. Creation of the position of project manager requires careful planning; certain criteria are offered for stipulating the authority relationships:

⁵ Certain defense companies have taken positive steps in this direction. For example, within the Hughes Aircraft Company the project manager is given official sanction (and thus authority) through the publication of a policy instrument. In the Aerospace Group of Hughes Aircraft Company each of the Product Line Divisions is assigned management responsibility for programs within its product lines; the implementation of these programs is generally accomplished by many different organizational units throughout the company; therefore, the Divisional Manager assigns project managers as necessary to provide the required project-oriented management continuity. The project manager may superimpose a project structure on the existing company organization; the specific authority and responsibility of the project and functional managers are then delineated to insure unanimity of objective. (Hughes Aircraft Company, "Aerospace Group Policy—Project Management, No. 1-15," dated March 25, 1964.)

(Cont. on Page 24)

Knitwear Industry Advisory Committee Named by DSA

Twelve representatives of the knitwear industry have been named by the Defense Supply Agency to serve as members of an Industry Advisory Committee on knitwear.

The Committee will act as an advisory group, on problems involved in supplying knitwear products to the Armed Forces, to the Agency's Defense Clothing and Textile Supply Center, Philadelphia, Pa. During FY 1964 the Center purchased more than \$15,500,000 of knitwear products.

DSA purchases and distributes to the Military Services commonly-used supplies, including food, clothing and textiles, electronic parts, fuel and petroleum products, medical, chemical, industrial, construction and general supplies. It also performs common services for Department of Defense elements. These include surplus property sales, cataloging, and providing research reports and documentation services.

Industry representatives named to the Advisory Committee on knitwear are: Clarence Burton, President, Lynchburg Hosiery Mills, Inc., Lynchburg, Va.; Clarence H. Capers, Vice President, Waynesboro Knitting Co., Waynesboro, Pa.; Pleasant H. Hanes, Jr., President, P. H. Hanes Knitting Co., Winston-Salem, N.C.; James R. Hibshman, President, Lion Knitting Mills, Cleveland, Ohio; Arnold Kramer, President, Kaybe Hosiery Mills of North Carolina, Inc., Thomasville, N.C.; William K. Mauney, Jr., President, Mauney Hosiery Mills, Inc., Kings Mountain, N.C.; Jerome M. Stone, President, Pottsville Mills, Inc., Pottsville, Pa.; Rothermel Wise, President, Howard Knit Products, Gastonia, N.C.; David Rosenblatt, Secretary, Highland Knitting Mills, Inc., Philadelphia, Pa.; Clark Easterly, President, Johnstown Knitting Mills Co., Inc., Johnstown, N.Y.; Eugene C. Gwaltney, Jr., Vice President and General Superintendent, Russell Mills, Inc., Alexander City, Ala.; Ellis Mills, President, Ellis Mills, Inc., Hickory, N.C.

President Johnson Commends Defense Contractors for Cost Reduction

In a personal letter from the President of the United States, 72 defense contractors were commended for responding "vigorously and effectively" to his call for a positive program of cost reduction to help guarantee our country a maximum of defense at a minimum cost.

This response resulted from President Johnson's request to defense contractors early in December 1963 to "intensify efforts" that would "achieve cost reductions in the performance of Defense contracts." Guidelines were established that defined an Effective Contractor Cost Reduction Program for contractors with an annual volume of Defense sales in excess of \$5 million.

The "appreciation" of President Johnson was announced April 28 to industrial representatives attending the Washington Advanced Planning Briefings for Industry, when the text of the President's letter to the firms participating in the program was read by Joseph A. Califano, Jr., The Special Assistant to the Secretary and Deputy Secretary of Defense.

Fifty-three of the 72 companies were contributors to the Cost Reduction Exhibits displayed during the

Washington briefings as well as during those previously held in Los Angeles, New York, Chicago and Dallas. At the conclusion of the briefings, 128 of the most representative exhibits were displayed for two weeks in the Pentagon concourse.

"It was most gratifying," President Johnson noted in his letter, "to see your company listed among those firms recently called to my attention by the Secretary of Defense as having responded vigorously and effectively. . . . As promised in my initial letter, such achievements will be a significant factor in determining future source selections, and in establishing profit and fee rates for noncompetitive negotiated contracts."

In concluding his letter, President Johnson stated, "Please accept my personal thanks for the achievements you have made, and for those which I am certain you will accomplish in the years ahead. You have justified my optimism that, together, we can achieve our common goal of a dollar's worth of defense for every dollar spent."

The companies receiving the President's letter were:

Aerojet-General Corp.
American Air Filter Co., Inc.
American Bosch Arma Corp.
ARO, Inc.
AVCO Corp.
Beech Aircraft Corp.
Bell Aerospace Corp.
Bendix Corp.
Boeing Co.
Bunker-Ramo Corp.
Burroughs Corp.
Collins Radio Co.
Continental Motors
Cook Electric Co.
Cornell Aeronautical Laboratory, Inc.
Curtiss-Wright Corp.
Day & Zimmermann, Inc.
Douglas Aircraft Co., Inc.
Dynalectron Corp.
Electronic Communications, Inc.
Fairchild Camera & Instrument Corp.
Fairchild-Hiller Corp.
FMC Corp.
Garrett Corp.
General Dynamics Corp.
General Electric Co.
General Motors Corp.
General Precision, Inc.
Goodyear Aerospace Corp.
Grumman Aircraft Engineering Corp.
Gyrodyne Company of America, Inc.
Hayes International Corp.
Hercules Powder Co.
Honeywell, Inc.
Hughes Aircraft Co.
International Business Machines Corp.

International Harvester Co.
International Telephone & Telegraph Corp.
Kaiser Industries Corp.
Kaman Aircraft Corp.
Keltec Industries
Kollsman Instrument Corp.
Lear Siegler, Inc.
Ling-Temco-Vought, Inc.
Litton Industries, Inc.
Lockheed Aircraft Corp.
Marquardt Corp.
Martin-Marietta Corp.
Maxson Electronics Corp.
McDonnell Aircraft Corp.
Melpar, Inc.
North American Aviation, Inc.
Northrop Corp.
Olin Mathieson Chemical Corp.
Pan American World Airways, Inc.
Philco Corp.
Radio Corporation of America
Raytheon Co.
Remington Arms Co., Inc.
Republic Aviation Corp.
Ryan Aeronautical Co.
Space General Corp.
Sparton Corp.
Sperry-Rand Corp.
Sylvania Electric Products, Inc.
Thiokol Chemical Corp.
Thompson Ramo Wooldridge, Inc.
United Aircraft Corp.
Vitro Corporation of America
Western Electric Co., Inc.
Westinghouse Electric Corp.
Whittaker Corp.

Technical Document Markings to Control Distribution Simplified

A broad new policy which simplifies the markings that can be placed on DOD technical documents to control their distribution has been established by the Department of Defense.

Affecting the full range of technical documentation employed by DOD components and their contractors, the new policy provides that DOD contractors shall use a single distribution statement and instructs DOD offices to use one of five other officially authorized distribution statements. Provision also is made for automatic removal of three of these six distribution statements at the end of three years.

The new policy does not affect any existing regulations relating to markings used for military security purposes. The newly authorized distribution markings are intended for use on either classified or unclassified technical documents, where appropriate.

DOD Directive 5200.20, "Distribution Statements (other than security) On Technical Documents," was issued on March 29, 1965, by Cyrus R. Vance, Deputy Secretary of Defense, to spell out the new policy guidance to all DOD units responsible for generation or handling of technical documents. Units are given until January 1, 1966, to implement the necessary steps and to comply fully with the provisions of the directive.

The one distribution statement allowed for use by DOD contractors has been established by recent revisions to the Armed Services Procurement Regulation (ASPR). It provides for those circumstances in which the DOD obtains only limited rights to the data contained in the technical document. The "limited rights" statement permits the Government to use the data, but disclosure outside the Government is not permitted except in certain specified types of emergency. The "limited rights" statement may be removed only by the contractor or by formal negotiation with the contractor and there is no automatic removal of such statements.

The five DOD-imposed distribution statements represent a graduated set of controls. In order of increasing controls, the five statements provide for (1) world-wide, public dissemination, (2) to U.S. citizens only, (3) within the Government only, (4) within DOD only and (5) within the originating DOD component only. The statement restricting distribution to U.S. citizens only is derived primarily from laws relating to export of U.S. military and commercial know-how, and this statement will remain in effect as long as the laws on which it is based continue in force. The last three statements automatically lose their effect at the end of three years unless the originator takes official steps to continue them for another three years.

The new directive provides that each use of one of the controlling statements be individually justified, and it summarizes the allowable reasons for using each of the controlling statements. It also provides that all copies of a technical report, or other technical data document, shall be marked with the appropriate distribution statement in a prominent location.

Procedures are set forth in the directive for public release of technical documents as they become declassified or as they lose the protection of one of the distribution statements which prevent public dissemination.

Issuance of the directive is a product of studies undertaken more than a year ago to identify and recommend action on factors which inhibit the flow of technical documents in DOD. A committee of representatives from the military departments and from Office of the Secretary of Defense units formulated the basic specifications for DOD action to reduce the variety of distribution statements now being used and to increase the care being taken to insure that each use of such statements is fully justified by the content of each technical document.

Application of Management Skills Emphasized by ICAF's Gen. Steele



Maj. Gen. W. S. Steele, USAF
Deputy Commandant
Industrial College of the
Armed Forces

Four basic trends which have evolved with the effective application of management skills in the Office of the Secretary of Defense may be expected to continue with increased emphasis, Major General W. S. Steele, USAF, Deputy Commandant of the Industrial College of the Armed Forces, told members of the National Capital of the Armed Forces Management Association at a luncheon meeting in Washington, D. C., last month.

The speaker said these trends are (1) swift and dynamic systems changes, (2) closer integration of political plans and programs with both short and long-range military plans to achieve national objectives, (3) greater reliance on the capabilities of modern communications and computer-based systems and (4) increased opportunities for centralized policy direction and control, coupled with decentralized policy implementation.

"The size, complexity and immense resources at the disposal of the Department of Defense impose an overriding requirement for only the best in management policies and practices," General Steele said. "In no other area do the results more directly reflect the management skills which are exercised."

"Defense management has been an orderly, phased conceptual evolution, inherent in the development of unified action by the Armed Forces into accepted practice. Trends in defense management have been attributed to many different causes, but no one will deny that current trends reflect the desires of one man—Secretary of Defense Robert S. McNamara. His personal management philosophy is at work constantly—directed towards managers who ask the right questions, suggest the right alternatives, propose the right objectives and stimulate dynamic progress towards the attainment of national objective."

"For the first time," General Steele said, "all planning is being done on a coordinated basis and decisions are being made by and not for decision makers. All combat forces have been brought under the operational control of the Joint Chiefs of Staff, combat effectiveness of these forces has been maintained, greater efficiency and economy have been attained by eliminating duplication and the decision-making process has been strengthened."

The speaker said there is one important item that has influenced all management actions in the Defense Department. This is increased reliance on cost reduction programs which have three basic features: (1) buying only what is needed, (2) buying at the lowest sound price and (3) reducing operating costs. Accordingly, cost effectiveness studies have evolved as prime management tools.

"Our major task is to keep the intricate, rapidly developing field of military management education under close, searching scrutiny," General Steele said. "Our goal is to provide education for today's and tomorrow's defense leaders. Currency, not history, has become our byword. Probing management frontiers and being responsive to trends in defense management has required a dedicated, questioning, forceful and enthusiastic approach. Based upon a careful program of study, experimentation, investigation and planned innovation, the curriculum for the class graduating in June of this year has been reoriented to increase the amount of attention paid to the entire spectrum of defense management."



FROM THE SPEAKERS ROSTRUM

U. S. Army Highlights DOD/NSIA Advanced Planning Briefings

As a special feature, this month's "From The Speakers Rostrum" presents excerpts from the Army addresses given at regional DOD-NSIA Advanced Planning Briefings for Industry held during March and April in Los Angeles, New York City, Chicago, Dallas and Washington, D. C.

The Navy and Air Force presentations will be covered in the next two issues of the Bulletin.

U. S. Army Advanced Planning Requirements



Gen. F. S. Besson, Jr., USA
Commanding General
U. S. Army
Materiel Command

U.S. Army Materiel Command

Our equipment and materiel must daily increase in lethality and effectiveness. We must constantly seek for ease of maintenance and simplicity of operation. Our equipment must be rugged and, at the same time, light in weight, mobile and easily transportable. Because we have, in being, a large Army in the field, deployed around the world, our requirements fall into two broad categories. First there are the day-to-day requirements for equipment—the tested and standardized equipment—to sustain our forces in training here in the Continental United States or deployed overseas. The second category is for new and better equipment . . .

During Fiscal Year 1966, to meet anticipated requirements for future hardware, it is expected that the Army will spend with industry approximately 4 billion dollars.

This outlay of taxpayer's money provides the Army with its day-to-day needs ranging from fan belts to missiles. It also invests in our most important resource—the creative talent of industry. Meeting our needs for tomorrow's hardware will require significant technological breakthroughs . . .

Operations and Maintenance Needs.

A lesser known kind of Army requirement might be labelled its operations and maintenance needs. Yet it should be obvious, when you think about it, that the Army, at its present size, deployed around the world in such places

as Alaska, Korea, Vietnam, as well as here in the United States, has tremendous annual requirements for consumption items, repair parts, minor pieces of equipment and services of all kinds. Satisfying these requirements is a huge logistical job.

The job is to feed, clothe, and house almost a million military personnel, operate and maintain over 190 active major installations, as well as thousands of vehicles, aircraft, tanks, guns and missiles, all over the globe.

. . . . Each year we buy and consume the parts and assemblies for a \$200 million in-house major overhaul program and we contract for an additional \$70 million worth of equipment maintenance . . .

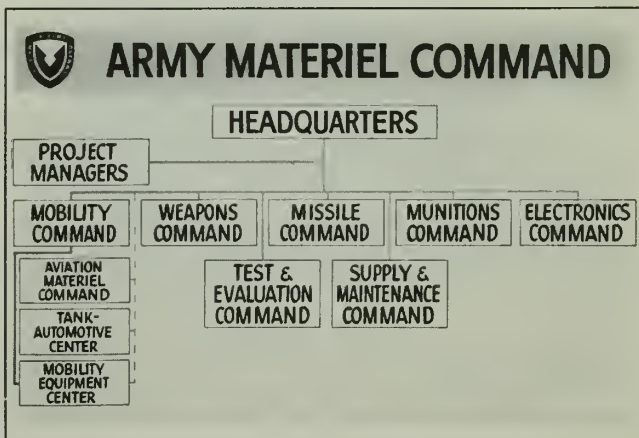
One item of service alone—commercial transportation—costs about a quarter of a billion dollars a year.

This fiscal year the Army will buy from industry approximately \$2.5 billion worth of goods and services to meet its operational needs as distinct from end item hardware. Through 1970 we estimate that the rate of spending will remain relatively level. If our estimate is correct, more than \$1.75 billion would be spent through our central procurement offices . . .

Future Requirements.

First, our needs are not centered around a few weapons systems. The hardware needed to effect prompt and sustained combat operations must be effective in a variety of geographic and climatic conditions. This equipment must support the soldier on the land as well as in his immediate water and air environment. Above all, the equipment and tools of war must provide the Army a flexibility of response. We may only desire to establish control over an enemy without necessarily destroying him. Our hardware needs to meet these conditions must, therefore, be wide-ranging in scope. All categories of industry, both large and small, have an important place on the Army-industry team.

Second, during the next five years our total procure-



ment will reflect a relatively level rate of spending. Compared with the past five years, our spending for mobility items is expected to increase and our spending for missiles to decrease. This latter trend may be reversed if missile systems now under development are released for production. Our spending for other categories and kinds of hardware and services should remain about the same.

... Today our nation is aware of the need for an active defense industry in this time of uncertain peace. Our responsibilities for wise management of the resources entrusted to us have never been greater. The Army welcomes this opportunity to discuss its plans for the future; for by such exchanges, the Army-Industry team can better fulfill its purpose.



Maj. Gen. J. G. Zierdt, USA
Commanding General
U. S. Army
Missile Command

U.S. Army Missile Command

Here are five general areas where we are working—where we have pressing requirements that could lead to new missile systems

Defense Against Ballistic Missiles.

... The Nike-X program is now in advanced development and continues under the highest national priority.

We have in early development a system designated SAM-D, Surface to Air Missile Development, formerly known as AADS-70 Later this year we shall make a selection of proposals concerning SAM-D concepts and recommend initiation of a program definition phase to the Department of Defense. We are looking here for new means of target acquisition and new ways of packaging to get the compactness required to keep the system mobile—a prime requirement for all Army missile systems—on a reasonable number of standardized ground vehicles. The missiles used as kill mechanisms in SAM-D must be small enough to be mobile, rugged enough to stand the bouncing around or movement on the battlefield and fast enough to get out and make a kill before it's too late.

Expanded Anti-Tank Capabilities.

A technical job almost as tough as missile defense is posed by Army requirements for an effective anti-tank weapon

For the individual soldier, we want an easily operated lightweight direct fire weapon with which he can reach out and kill tanks he can see before they are on top of him

We need propellants with very high burning rates and some solutions for the structural and aero-dynamic problems caused by the terrific velocities such propellants produce.

Another facet of the problem involves a forward observer with a target in view and some means of homing in a missile on call

... In short, we know a great many approaches that

won't work, and a few that will. There is room for any company with ingenuity in the anti-tank area.

Army Air Assault Operations.

We are trying many systems. The LASER, as an illuminator is a semi-active homing approach, looks good as a means of improving the accuracy of helicopter fire power. One of our more unique problems here is to provide interchangeable weapon systems to avoid specializing the aircraft.

Forward Area Low Altitude Air Defense.

All our operational air defense missiles are mobile, but they must stop and set up before they can fire, and they cannot get all the way forward

Redeye illustrates a good solution to our requirement for simplicity. We realize we are attempting to cope with intricate threats. They may require complicated solutions. That's fine, provided it's in the shop where it can be handled by engineers and technicians, not in the foxhole

Division Support with Optimized Non-Nuclear Warheads.

General support missiles and rockets include the weapons and the role you are perhaps most familiar with. In essence they are the Army's long range artillery, used to reach out beyond the range of conventional guns. Since our Sergeant and Pershing ballistic missiles now provide long range nuclear fire support for Army field forces, the emphasis has shifted to meeting the need for non-nuclear fire at extended ranges.

A capability for nuclear and non-nuclear fire is a must for any new general support weapon If we must have the nuclear shot, we'll need it right now, but in the meantime, we'd like to get some work out of the missile so we ask for dual capability.

Finally, we need multipurpose missiles that can be used for more than a single type target Multi-purpose weapons can cost more in money to get, but their real cost in men, materiel, training, logistics and so forth should be much less. The inexpensive solution that will do the job is the one we favor every time

It's not necessary to knock on our door with an entire new weapon concept to do business with the Army Missile Command. Over the next five years we anticipate spending between 150 and 200 million dollars on critical component work, exploratory and advanced development, in addition to R&D money spent on a particular system such as Nike-X.

To name but a few, we want simplified, lower cost inertial guidance systems; high mass fraction propulsion units; propellants with higher burning rates and lighter weight missile ground support equipment. We are wide



U. S. Army Lance Ballistic Missile

open for new ideas with LASERS for battlefield applications.

How many of you have looked at the possibilities opening up in pure fluid control systems? Pure fluids look simple, and they look to me like a lot of money for the first guy who makes them go the way we want them to go.

Refined specifications for the missiles of the future simply do not exist. So we look to you for good ideas. We are in the market for thoughts as well as things

If you have any ideas you'd like to try on us, if you desire further information on anything I have said, contact us.



Maj. Gen. W. W. Lapsley,
USA
Commanding General
U. S. Army
Mobility Command

U.S. Army Mobility Command

The Army Mobility Command (MOCOM) is responsible for research and development, procurement maintenance, and supply management of all Army mobility equipment, with the exception of combat vehicles. The Command, with headquarters located in Warren, Michigan, has three subordinate commands, each commanded by a general officer. They are Army-Tank Automotive Center (ATAC), Warren, Michigan; the Aviation Materiel Command (AVCOM), St. Louis, Missouri; and the Mobility Equipment Center (MEC) also in St. Louis.

Our FY 66 Program is estimated at over \$1 billion.

Automotive Equipment.

In the automotive equipment field, the FY 66 program will approximate \$514 million

The M151 ¼ ton truck is replacing the M38A1 Over 25,000 of these vehicles are now on contract for delivery during FY's 65, 66 and 67. Procurement of over 25,000 of these vehicles on a competitive three-year contract amounting to about \$70 million is planned for FY 65. Another multi-year buy valued at over \$100 million is scheduled for the future

M-44 2½ ton truck For FY's 65-66 we plan a competitive procurement of over 15,000 units—amounting to over \$100 million. The next large competitive buy is scheduled for a later period, and it will be a multi-year contract valued at over \$150 million. We are planning an additional multi-year procurement valued at over \$70 million

Aviation Equipment.

In the field of aviation equipment, about \$411 million is expected to be available for development and procurement in FY 1966.

. . . UH-1 Iroquois utility helicopter, more popularly known as the "Huey". Over \$300 million is programmed for their procurement in the next several years

The newest addition to our aircraft is the CH-47 CHINOOK helicopter Over \$200 million in procurement is anticipated during the next few years.

. . . the Hughes and Hiller Models of the Light Observation Helicopter. They are final competitors for a fixed-price multiple-year buy of approximately 700 aircraft scheduled for award in FY 66.

. . . the experimental aerial crane, developed by Sikorsky. It has a lift capacity of about six tons at moderate ranges, with a maximum capacity of up to 10 tons. A requirement exists for a larger model in the 12 to 20 ton range

Military Support Equipment.

In the field of other mobility support equipment, the FY 1966 program will approximate \$153 million.

Generator sets range in size up to 300 KW with a wide range of frequencies and voltages. Our present forecast shows annual requirements of over \$25 million for this equipment over the next several years

The Universal Engineer Tractor. . . . If testing is successful, a procurement program of \$50 million is scheduled within the next several years.

The Mobile Assault Bridge is now being procured. . . . The Army has planned future procurement of over \$100 million for this equipment.

Recent technological advances in the field of image intensification have brought new promise to night operations This procurement program could well run over one-quarter billion dollars over the next several years.

In other fields we must continue our development of amphibious vehicles. We need lightweight precise power turbine generator units, practical fuel cells, and new sources of energy and new propulsion systems for heavy equipment. We need lightweight materials and new engineering and design for bridges, lighter and more sensitive mine detectors, including aerial detection devices, and we must find new materials and methods to permit mass production of high quality lenses for the night vision devices which we require

In conclusion, there are wide ranging, attractive and challenging opportunities for industry to join with Army in development and production of improved automotive-aviation and other mobility support equipment. Success will not come easy for either of us but with the ultimate stake—our continued freedom—we can't afford less than our best effort.



Mobile Assault Bridge on M-60 Tank



Maj. Gen. F. W. Moorman,
USA
Commanding General
U. S. Army
Electronics Command

U.S. Army Electronics Command

I am going to talk about six major areas in our programs. These are Communications; Combat Surveillance and Target Acquisition as a combined item; Automatic Data Processing; Avionics or aircraft electronics; Image Interpretation; and Electronic Components, or parts. Although we have some good capabilities in these areas, we also have some critical requirements as well.

Communications.

Let's take a general look at communications. . . .

300-line Solid State Switchboard. . . . The Army expects to buy initial lots within 15 to 18 months and procurement for troop issue is expected to start thereafter, with outlays each year of more than 15 million.

VRC-12 and PRC-25 Combat Radio Sets. . . . Over 200 million dollars in contracts have been processed. The Army expects the total for the life of the project to top 400 million—as presently estimated.

Radio Relay Sets and Multiplexers. . . . The Army expects overall procurement, including other essentials, to run about 100 million during the next several years.

Single Sideband Family of Radio Sets. . . . Purchases through the next several years are expected to total more than 50 million dollars.

Multichannel Tropospheric Scatter Radio Set. . . . Starting in the relatively near future, the Army plans to spend about 15 million dollars annually over a period of several years.

UNICOM-STARCOM is a complex of systems which, when grouped together, provide for use of numerous modes of communications, automatic switching, data handling, message processing, and other operations. The program is divided into both research and development and equipment procurement.

Combat Surveillance and Target Acquisition.

. . . . To obtain some of the things we want, the Army plans to devote more than 150 million dollars for surveillance R&D, and we expect to have some sizeable equipment buys as well.

The man-packed radar is one of the items we plan to buy—for better detection of moving personnel and vehicles. It should be standardized during FY 66.

In airborne surveillance, the OV-1 Mohawk systems that we now use variously employ heat-sensitive radar, photography and infrared sensory devices.

As a successor to these, the Surveillance and Target Acquisition Aircraft System, or STAAS, is under study. One proposed system would make use of a high-performance aerial vehicle, advanced sensors, data links, and avionics.

Currently in the test and evaluation phase is Overseer, or the MQM-58A, an airborne surveillance system whose unmanned aircraft make fast reconnaissance flights during either daylight or darkness. . . .

Combat surveillance equipment buys, including the new manpack radar, Overseer, and other items may come to a combined gross of more than 100 million in the future.

Automatic Data Processing.

In continuing work in automatic data processing for handling tactical information and analysis, much of the R&D is encompassed in our Command Control Information Systems 1970, or CCIS-70. Five major sub-systems for field army use are involved. They are for fire support; intelligence; personnel and administration; logistics, and tactical operation centers. It is expected in the near future to announce plans for a symposium early this coming summer at which future plans and programs for CCIS-70 will be discussed with interested members from industry.

Avionics.

. . . . The Army tentatively plans to spend more than 50 million dollars for avionics R&D contracting in the next several years. Equipment purchases for these devices are expected to run about 12 and one-half million annually.

Image Interpretation.

A great deal of the photo-type data obtained through airborne surveillance must be analyzed rapidly for tactical use. The AN/TSQ-43 Tactical Image Interpretation Facility, or TIIF, is representative of some of the progress being made in this area. . . . 1965 may see the initial production of a limited quantity of this equipment. The Air Force has been designated executive agent of a joint program office to develop a next generation of information processing and interpretation systems. . . . Prospective advances in image interpretation will utilize not only real-time transmission of data but will allow real-time—that is, immediate—interpretation of the imagery as well.

Electronic Components.

. . . . For external R&D in components, the Army has allotted more than 75 million dollars through the next several years.

. . . . We want more than low weight and small size in microelectronics. We also want high reliability and designs that can be mass produced at less cost than present conventional electronics.

Advanced work in transistors remains a wide open field. . . .

Fuel cells are but one example of work aimed at meeting the need for more efficient silent power sources for combat use. . . .

Continuing research, through basic, exploratory and applied levels, is the life blood for successive generations of weapons and systems for the field. There is no limit on new discovery. To the contrary, each new discovery triggers off a progression of still more discoveries to come.

As has been the case, we shall, of course, depend upon industry to provide us with a good share of the new discoveries through which the vitality of our defense is maintained. And we re-emphasize that the door swings both ways. When we do not come to you, call on us. The Army has a continuing interest in receiving and evaluating unsolicited proposals containing new ideas, suggestions, and inventive concepts for weapons, supplies and equipment. You can be sure that your ideas will be carefully considered. . . .



Maj. Gen. R. B. Anderson,
USA
Commanding General
U. S. Army
Weapons Command

U.S. Army Weapons Command

During FY 1966, the Weapons Command will place contracts with industry for shooting hardware amounting to approximately \$260 million. Through 1970, we estimate that the rate of spending will remain relatively level.

Let's take a look at some of our principal programs.

First, the Army's M60A1 Tank The Army expects its program for this vehicle through the next few years to amount to several hundred million dollars.

There are two adaptations of the M60 Tank for specialized tasks, the Combat Engineer Vehicle and the Armored Vehicle Launched Bridge.

. . . . The procurement program for these vehicles in FY 66 should amount to about \$21 million.

. . . . We will procure about \$90 million worth of the M109 self-propelled 155mm Howitzer during FY 1965 and FY 1966.

We will spend an additional \$25 million on M110 eight inch Howitzers and the M107 175mm guns.

Additionally we will spend about \$26 million for a retriever version of the M107/M110 which mounts a wrecker boom and is designed for battlefield recovery of disabled vehicles.

The newest development in our armored vehicles has been named the General Sheridan

Over the next several years our procurement program for the Sheridan will amount to more than one-quarter billion dollars.

Still another advanced vehicle is under development, the Mechanized Infantry Combat Vehicle If the development program for the MICV is successful and the Army gets the go-ahead, procurement for this vehicle is currently estimated at more than \$100 million.

In aircraft weaponization probable procurement for the M5 40mm Grenade Launcher could amount to a little over \$7 million in the next few years.

Another aircraft weapons subsystem being considered is the XM21, a machine gun-rocket launcher combination. Expenditures over the next several years could amount to approximately \$26 million.

Finally, in the major procurement field, we expect to buy four versions of the well-known M113 Armored Personnel Carrier

. . . . The expected procurement for the four versions of the M113 could amount to more than \$100 million over the next few years.

The research and development program of the Weapons Command is running at an annual level of about \$40 million. The forecast for the next several years is that this rate will remain relatively level.

A new rifle, the SPIW, is designed to enhance the killing power of the individual soldier. It is well along in the concept study stage.

The concept of a lightweight, unarmored, self-propelled 155mm Howitzer is under scrutiny. And these are just two of the many items under study.

In the vehicular armament field, we are working for cannon with higher velocity, more rapid rates of fire, and improved accuracy. New mortars are on the drawing boards and in development.

In fire control, we are exploring more sophisticated systems which will be less complicated to operate and more nearly approach an all-weather capability.

In combat vehicles, we are looking for significant improvements—for better cross-country capability, an engine that efficiently uses more than one fuel, more rugged track and suspensions systems, better swimming ability as well as improved armor and better tank defeating armament.

Next comes aircraft weaponization. Up to now we have been mounting infantry type weapons in our aircraft. We need configurations specifically designed for aircraft. We must develop a capability to deliver stand-off fire so the aircraft need not be over the target to engage the enemy. Machine guns of various calibers, several of which utilize the Gatling-gun principle, are under development. Weight of the weapon system must be held to the absolute minimum. Recoil must be reduced or eliminated.

In aircraft fire control, we need rapid solutions to range computations, automatic tracking, and increased night capability.

Joint Meteorological Satellite Program Office Established

The Defense Department has established a Joint Meteorological Satellite Program Office (JMSPO) to coordinate requirements for the use of meteorological satellites by the Military Services.

For the past several years, DOD has been working in cooperation with the Weather Bureau on the National Weather Satellite Program. This experience has shown that this new technology is important to military operations. Satellite meteorological information can assist in such military areas as missile launches, tests of re-entry vehicles, targeting data and fleet movements.

The JMSPO has the following responsibilities:

- In cooperation with the U. S. Weather Bureau, continually review the National Aeronautics and Space Administration's meteorological satellite program to define military applications of the national system and arrange DOD technical efforts to support the national program.
- Collect and coordinate Military Service and Joint Chiefs of Staff requirements relative to meteorological satellites.
- Provide staff management of any DOD meteorological satellite developmental efforts.
- Provide DOD support and technical assistance to U. S. representatives engaged in international discussion on weather satellites.
- Perform other tasks and functions relative to weather satellites as might be directed by the Office of the Director of Defense Research & Engineering.

The new office is jointly staffed with meteorological specialists from all three services. It is assigned to the Office of the Deputy Chief of Staff, Research & Development, Headquarters, U. S. Air Force, and receives overall guidance from the Office of the Director of Defense Research & Engineering.

Directing the office is Colonel Peter E. Romo, USAF. Other staff members are: Lieutenant Colonel N. L. Durocher, USA; Commander W. S. Houston, USN; and Lieutenant Colonel D. J. Eddleman, USAF.

The JMSPO is located in Room 4D227, The Pentagon; telephone numbers are OXford 7-9670 and OXford 7-9163.



He holds a Master of Science degree in meteorology from the University of California at Los Angeles.

Colonel Peter E. Romo, USAF, Director of the Joint Meteorological Satellite Program Office (JMSPO), of the Department of Defense. Prior to his assignment to JMSPO, Colonel Romo was Staff Meteorologist for Cape Kennedy and the Eastern Test Range. While in that position he participated in the entire Mercury Program of the National Aeronautics and Space Administration as well as launches of several missile system programs of the Defense Department.

BIBLIOGRAPHY

DOD Directive 4105.62, "Proposal Evaluation and Source Selection," April 6, 1965. Establishes DOD objective principles and policy for the evaluation of proposals and the selection of contractual sources.

DOD Instruction 4270.7, "Air Conditioning, Evaporative Cooling, Dehumidification and Mechanical Ventilation," March 8, 1965. Establishes design and installation policy for air conditioning, evaporative cooling, dehumidification and mechanical ventilating equipment.

DOD Instruction 5100.38, "Defense Documentation Center for Scientific and Technical Information (DDC)," March 29, 1965. Provides for policy direction by the Director of Defense Research and Engineering and operational control by the Director, Defense Supply Agency, of the Defense Documentation Center for Scientific and Technical Information. It also delineates participation responsibilities of all DOD components engaged in research, development, test and evaluation efforts.

DOD Directive 5160.51, "Time and Time Interval Standards and Calibration Facilities for Use by Department of Defense Components," Feb. 1, 1965. Establishes policy and assigns responsibility to the U.S. Naval Observatory for establishing, coordinating and maintaining capabilities for time and time interval (astronomical and atomic) for use by all DOD components, DOD contractors, and related scientific laboratories.

DOD Directive 5200.20, "Distribution Statements (Other Than Security) on Technical Documents," March 29, 1965. Supplements DOD Directives 5100.36 and 5200.6 establishing official distribution statements to be used by all DOD components and providing direction in their use.

DOD directives and instructions may be obtained from:
Publications Distribution Branch
Office of the Secretary of Defense
Room 3B938, The Pentagon
Washington, D.C. 20301

Defense Procurement Circular No. 25, March 31, 1965. Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Educational Institutions; Administration of Contracts with Canadian Contractors.

Defense Procurement Circular No. 26, April 8, 1965. Extension of Defense Procurement Circular No. 11 and Modification of Value Engineering; Addition to Paragraph 1-1703.3, *Future Acquisition Savings*; List of 100 Contractors Awarded the Largest Dollar Amount of Defense Contracts; Amendment of Section XIII, Government Property—Revision No. 8, dated Nov. 1, 1964, as Amended by Defense Procurement Circular No. 23; Patent Policy of Educational or Non-Profit Institutions; Procedure for Approval of Educational or Non-Profit Institutions; Procedure for Approval of Patent Policy of an Education or Non-Profit Institution; List of Educational or Non-Profit Institutions Having Patent Policy Approved by the DOD under the ASPR.

Each Defense Procurement Circular (DPC) is designed to place new or changed policies or procedures in effect prior to publication of an Armed Services Procurement Regulation (ASPR) revision. The items in each circular are cancelled after six months, unless specifically eliminated earlier by a new DPC or by publication in the ASPR. ASPR subscribers will receive Defense Procurement Circulars through the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Dictionary of United States Military Terms for Joint Usage (Short Title: JD). A dictionary of United States military terms prepared under the direction of the Joint Chiefs of Staff in coordination with the military services for planning and operational usage. The appendix contains the NATO glossary of terms and definitions. Rev. Dec. 1964. 249 p.

Catalog No. D5.12:1/5 \$1.50

Incentive Contracting Guide, 1965. Developed to assist in the proper application of the DOD objective to harness the profit motive to work for the truly effective and economical performance required in the interest of national defense, this incentive contracting guide discusses the nature and objectives of incentive contracts; cost, schedule and performance incentives; multiple-incentive contracts; changes; trade-off analyses; and exceptional methods of structural multiple incentive contracts.

Catalog No. D7.6/4:In2/965 \$1.25

U.S. Industrial Outlook 1965 (Third Printing). Analyzes trends since 1960, reports vital background information and statistics, gives detailed, industry-by-industry review of 1964, and outlines prospects for 1965. Prepared by BDSA Business and Industrial Specialists, it provides the latest facts and figures on production, sales, shipments, employment, productivity, imports and exports, new products and developments. 180 p. il.

Catalog No. C41.42/3:965 \$1.00

Compilation of Laws Relating to Mediation, Conciliation and Arbitration between Employers and Employees. A compilation of laws relating to mediation, conciliation and arbitration between employers and employees—disputes between carriers and employers and subordinate officials under labor board, eight-hour laws, employers' liability laws, and labor and child labor laws. 859 p.

Catalog No. Y1.2EM 7/6/964 \$2.20

Ranger VII, Photographs of the Moon, Part 1, Camera A Series. The text of this publication includes chapters on Ranger VII mission description and trajectory; impact-area selection and camera terminal alignment; television system description—cameras, receiving and recording equipment, camera calibration, film recording and processing — and camera A table of values.

Catalog No. NAS1.21:61 \$6.50

History of Communications-Electronics in the United States Navy. An authoritative history of the Navy's role and problems in establishment of disciplined usage and in developing and aiding development of equipment to improve the art. The Navy's development of radar, sonar, proximity fuzes, radio controlled torpedoes, and guided missile products of the electronic age. A chronology of developments in communications and electronics is included in the Appendix. 675 p. il.

Catalog No. D211.2:E12/7 \$4.75

Publications that require remittance are available for purchase at U.S. Government Printing Office, Washington, D.C.

NOTES FOR EDITORS

NAVY COMPLETES EVACUATION OF ARLIS II

Early in May the Navy completed evacuation of ARLIS II, a floating ice island scientific station which had been manned since 1961. Dr. Max Britton, Chief of the Office of Naval Research Arctic section, proclaims ARLIS II to be the most exciting development in Arctic research in recent years. The ice island broke from the circular Arctic current early in the winter and floated down the east coast of Greenland, providing the Navy with its first close study of this access route to the Polar Basin. Pictures, scientific data and the adventure aspect lend this three-year operation to any number of article approaches.

SEA LAB II OPERATION SCHEDULED TO BEGIN AUGUST 15, 1965

Another aspect of the Navy's growing "inner space" research is Operation Sea Lab II at La Jolla, California. Sea Lab II is scheduled to begin in August and continue for 30 days with the aquanauts living at a depth of 250 feet. In addition, a number of deep submergence and oceanographic research vessels are now in or nearing operations—ALVIN, ALUMINAUT, SPAR, FLIP.

DINER'S CLUB IN THE FIELD

The Army's new field food packets are far removed from the fabled field rations of World War II. The packets contain assorted meals with caloric values ranging from 934 to 1,133. Typical meals are beef hash, cereal bar, coffee, cream and sugar; chicken stew, fruitcake bar, cocoa; spaghetti with meat sauce, and cocoanut bar and cocoa. The packets are light enough to permit a soldier to carry a 10-day supply in the field. The packet was developed by the Limited War Laboratory at Aberdeen Proving Ground and the U.S. Army Laboratory, Natick, Massachusetts.

THE TARGET THAT THRIVES UPON NUCLEAR ATTACK

More than 20,000 times a month small groups of men place themselves within the range of a simulated ther-

monuclear blast. The details leading up to their potential obliteration are as correct as the trained radar-navigators of the Strategic Air Command can make them. The only thing lacking is a live warhead dropping from either high or low altitudes to destroy the target, which in this case is the Radar Bombing Site (RBS). What makes the RBS so valuable to the maintenance of the strategic deterrent is that it offers proof of the proficiency of SAC's crews and provides a changing challenge of varied targets at various cities. RBS is mounted in nine railroad cars with eating and sleeping facilities that are moved to different points around the country. The RBS crews are towed to a spot and then "shop" is set up for a period of 45 days. There are three such trains, one assigned to each of SAC's stateside numbered Air Forces. About 65 Air Force personnel are aboard each train.

FROM BERYL POWER TO EMERALDS IN TWO MINUTES

Scientists at the Naval Ordnance Laboratory have created synthetic emeralds of gem quality in about two minutes. The crystals are attracting attention in the semiconductor electronics field because of the maser characteristics of emeralds. A high-temperature, high pressure technique produces clear single crystal emeralds directly from beryl powder, and in far less time than is taken with the hydrothermal, flux or flame-fusion methods of synthesizing crystals. Wayne Wilson and Hubert Hall, NOL's co-inventors of the process, also report that the color of the crystals can be controlled easily by substituting various amounts of metallic oxides, particularly chromic oxide, in the basic beryl powder.

FIGHTERS TO CHECK MISSILE SYSTEMS AGAINST SUPERSONIC TARGETS

Navy and Air Force fighters are undergoing actual test of operational systems against supersonic BOMARC drone targets. Tactical Air Force and Air Defense Command aviators using F-101, F-104, F-106 and F4C systems are participating in the operational evaluations. Later this year, the Navy will use the BOMARC to test

the Terrier missile system which is aboard guided missile frigates and cruisers. The 1600-mph missile has been converted for drone use by Air Force technicians at Eglin AFB, Fla. The first drone was fired upon in February. The BOMARC A has a range of 250 miles and was operational for several years before replacement.

ARMY TO PUBLISH "SOUTHWEST PACIFIC SERIES" IN 1966

The operations reports of General of the Army Douglas MacArthur, published in three-volume series entitled "Southwest Pacific Area Series," are expected to be available to the public in 1966. General MacArthur turned over the page proofs for this series to the Department of the Army along with a large collection of source documents. This material is available for research purposes in the World War II Records Division, National Archives, in Alexandria, Va.

Any Editor interested in any information relating to the Department of Defense is invited to write to Chief, Magazine & Book Branch, OASD (PA), Washington, D.C. 20301.

About People

(Cont. from Page 7)

M. Johnson, Jr., Asst. for Mutual Security, DCS/Systems & Logistics, Hq., USAF; and Col. Edmund F. O'Connor, Dir., Industrial Operations, Manned Space Flight Center, NASA.

Maj. Gen. Benjamin O. Davis, Jr., has been nominated for promotion to lieutenant general and reassignment from Asst. Dep. Chief of Staff, Programs & Requirements, Hq., USAF, to Chief of Staff, U. S. Forces, Korea, and Chief of Staff, United Nations Command, Korea.

Lt. Gen. Thomas S. Moorman will be reassigned from Vice Commander in Chief, Pacific Air Forces, to Superintendent, U. S. Air Force Academy, about July 1.

Maj. Gen. Henry G. Thorne, Jr., became Commander, 17th Air Force, on April 19; Brig. Gen. Luther H. Richmond was assigned as Dep. Chief of Staff, Operations, U. S. Air Forces in Europe, effective April 19.

Project Manager (Cont. from Page 14)

- Project manager must have necessary executive rank to insure responsiveness to his requirements within the parent organization and be accepted as the authoritative agent of the parent organization in dealing with outside organizations.

- The project manager requires a well-qualified staff; his authority should include prerogatives relative to the staffing of his office from supporting functional agencies as required during the life of the project.

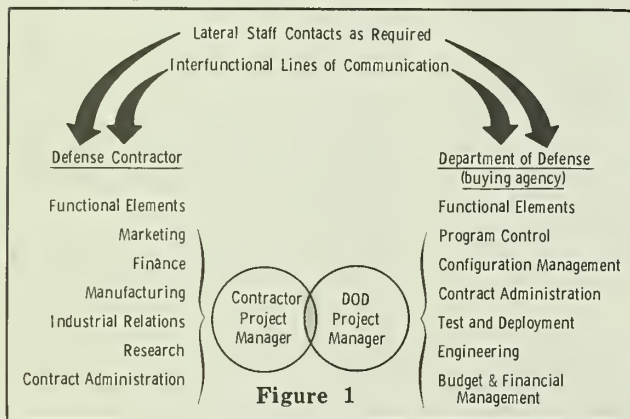
- No major technical, cost, schedule or performance decisions should be made without his participation.

- He should have sufficient authority and capability to control the allocation and expenditure of funds, and to actively participate in budgeting and schedule deliberations involved in the project.

- The project manager provides a single contact for exterior organizations involving major project considerations. He should have direct involvement in the selection of contractors to support the project effort. His authority should be the ultimate authority recognized by the official in the contractor's organization who is charged with contractual actions.

- The project manager should have the prerogative of submitting letters of evaluation on the adequacy of the support given him by the functional managers. Such letters could be used in evaluating the efficiency of the functional managers.⁶

- The project manager occupies a unique position of responsibility; within contemporary organizations he appears as a threat to the ingrained functional approach to the management process. Proliferation and potential dominance by staff agencies leads one to fear that the project manager could become merely a symbol of leadership without adequate acceptance to provide forceful and authoritative leadership. Tyrannical assumption of *project authority* by supporting staff and line managers can seriously hamper progress towards the project objective; traditional management theory cautions against usurpation of the line manager's authority by staff officials. The same risk occurs for the project manager who may find it difficult to be selective in the abundant staff and line assistance that is made available—and some cases directed—to him from organizational elements located in upper hierarchical positions.



Focal Position of the Project Manager.

The inter-organizational relationship depicted in Figure 1 reflects the situation when two organizations have a mutuality of interest in a large project; the establishment

⁶ Such a procedure would doubtlessly appear repugnant to the functional manager because of a suspected violation of the venerable superior-subordinate relationship. However, there is a direct correlation between the project success and the efficacy of functional support; consequently, the project manager should be given the greatest possible "leverage" in the application of project authority.

of a special project office in both the buyer's and seller's organization provides for a point of synthesis for the concentration of attention on the major problems of the project. The two managers, in such a face-to-face relationship, can control and resolve interfunctional and inter-organizational problems. Overlapping of the two project managers implies an area of inescapable interdependence in matters involving the project.

Conclusion

Project management is presented as a means of managing the development and acquisition of weaponry in an environment which requires the crossing of many functional and organizational lines of authority. As a unifying force, the project manager integrates the parochial interests of autonomous organizations toward a common objective; traditional concepts of authority, responsibility, and organizational theory are altered by the emergence of *project authority*, a new and unique application of authority in contemporary organizations. Project management is a relatively recent phenomenon; as existing organizations become larger and more interdependent, the role of the project manager will come into clear focus.

References

- Mee, John F., "IDEAtional ITEMS," *Business Horizons* (Summer, 1964).
- Davis, Keith, "The Role of Project Management in Scientific Manufacturing," *Arizona Business Bulletin* (May, 1962).
- Wittner, Howard M., "R&D Project Managers: What and Who Are They?," *Armed Forces Management* (March 1962).
- Besson, Lt. General Frank S., Jr., "I don't expect project managers to keep me out of trouble. . . .," *Armed Forces Management* (October, 1962).
- Cleland, Major David I., "Project 'Management,'" *Air University Review*, (Jan-Feb 1965).
- Hughes Aircraft Company, "Aerospace Group Policy—Project Management, No. 1-15" (March 25, 1964).
- Air Force Regulation 375-3, Department of The Air Force (November 25, 1963).
- Hansen, Major General Floyd A., "The Project Manager," *Journal of The Armed Forces Association* (Vol. 2, No. 4, 1964).

Moot and Riley Get New Posts in Realignment of OASD (I&L)

In a realignment of certain functions within the office of the Assistant Secretary of Defense (Installations & Logistics), Mr. Robert C. Moot has been named the Deputy Assistant Secretary of Defense (Logistics Services). The Logistics Services function includes policy formulation and management in the fields of tele-communications, transportation and warehousing contract support services and the DOD cost reduction program.

Mr. Paul H. Riley, formerly the Deputy Assistant Secretary of Defense (Supply & Services), has become the Deputy Assistant Secretary of Defense (Materiel Requirements). He is responsible for the management and policy areas associated with requirements for and production of weapons, major end items of equipment, repair parts and soft goods, supply management systems and petroleum logistics.

Mr. Moot, prior to the appointment to his new position, was Comptroller of the Defense Supply Agency (DSA). Before becoming the first Comptroller of DSA in 1961, he was the Director for Supply Management Policy in the office of the Assistant Secretary of Defense (Supply & Logistics).

DEFENSE PROCUREMENT

Contracts of \$1,000,000 and over awarded during month of April 1965:

DEFENSE SUPPLY AGENCY

- 2—**Usibelli Coal Mine, Inc.**, Fairbanks, Alaska. \$1,143,007. 192,750 tons of coal. Defense Fuel Supply Center, Washington, D. C.
- 8—**Socony Mobil Oil Co., Inc.**, New York, N.Y. \$2,197,365. Automotive gasoline and fuel oil. Defense Fuel Supply Center, Washington, D.C.
- Gulf Oil Corp.**, Houston, Tex. \$1,691,246. Automotive gasoline and fuel oil. Defense Fuel Supply Center, Washington, D.C.
- 9—**Trenton Textile Engineering & Mfg. Co.**, Trenton, N.J. \$1,524,600. 150,000 rucksacks. Trenton, N.J. Defense Clothing & Textile Supply Center, Philadelphia, Pa.
- 12—**Safety First Shoe Co., Inc.**, Nashville, Tenn. \$1,155,922. 206,784 pairs of combat boots. Huntsville, Ala. Defense Clothing & Textile Supply Center, Philadelphia, Pa.
- 14—**Burlington Industries, Inc.**, Erwin Mills Div., New York, N.Y. \$2,411,438. 1,360,500 cotton bed sheets. Durham, N.C. and Post, Tex. Defense Clothing & Textile Supply Center, Philadelphia, Pa.
- 16—**General Aniline and Film Corp.**, Binghamton, N.Y. \$2,192,916. 117,662 packages of radiographic film. Binghamton, N.Y. Defense Medical Supply Center, Brooklyn, N.Y.
- 20—**Ingersoll Products Div., of Borg Warner Corp.**, Chicago, Ill. \$1,334,837. 327,970 steel helmets. Chicago, Ill. Defense Clothing & Textile Supply Center, Philadelphia, Pa.

ARMY

- 1—**LaCrosse Dredging Corp.**, Chicago, Ill. \$1,366,005. Work on Sny Island Levee Drainage Dist., Flood Control Project. Quincy, Ill. U.S. Army Engineer Dist., Rock Island, Ill.
- 2—**Hardaway Contracting Co.; Sam Finley, Inc.; and Ryan Contracting Co., Inc.**, Atlanta, Ga. \$4,742,780. Construction work on Newburgh Lock and Dam, Ind. and Kentucky Project. Newburgh, Ind. Engineer Dist., Louisville, Ky.
- Philco Corp., Aeronutronics Div.**, Newport Beach, Calif. \$2,272,328. SHILLELAGH industrial engineering services. Los Angeles Procurement Dist., (AMC), Pasadena, Calif.
- 5—**Dravo Corp.**, Pittsburgh, Pa. \$28,853,975. Construction work on Racine Locks and Dam, Ohio River Project. Ravenswood, W. Va. Dist. Corps of Engineers, Huntington, W. Va.
- Eugene Luhr Co.**, West Sacramento, Calif. \$1,381,750. Work on the Alameda Creek Channel Improvement Project, Alameda, Calif. District Corps of Engineers, San Francisco, Calif.

Contract Index

Contract information is listed in the following sequence: Date—Company—Dollar Value—Material—Location Work Performed—Contracting Agency.

- Batesville Mfg. Co.**, Batesville, Ark. \$1,395,825. Ammunition components. Batesville, Ark. Ammunition Procurement & Supply Agency (AMC), Joliet, Ill.
- Davis Construction Corp.**, Hicksville, N.Y. \$1,313,724. Work on the Chesapeake and Delaware Canal Project. New Castle County, Del. District Corps of Engineers, Philadelphia, Pa.
- 6—**Bauer Dredging & Construction Co., Inc.**, Port Lavaca, Tex. \$3,438,202. Dredging work on the Delaware River Project. Marcus Hook, Pa. Dist. Corp of Engineers, Philadelphia, Pa.
- 7—**Dravo Corp.**, Pittsburgh, Pa. \$4,690,050. Manufacture and delivery of 67 hoists and 63 gates for locks and dams of the Arkansas River and Tributaries Project. Equipment will be manufactured in Pittsburgh and delivery will be made to various job sites along the Arkansas River. Dist. Corps of Engineers, Little Rock, Ark.
- General Motors Corp.**, Detroit, Mich. \$2,500,000. Design and development of the new main battle tank. Warren, Mich., and in Germany. Army Tank Automotive Center (AMC), Warren, Mich.
- 8—**Fisher Construction Co.**, Houston, Tex. \$1,497,728 (NASA funds). Construction of a LUNAR Mission and Space Exploration Facility at the Manned Spacecraft Center, Houston, Tex. Dist. Corps of Engineers, Fort Worth, Tex.
- Kaiser Jeep Corp.**, Toledo, Ohio. \$2,492,537. Modification for 417 2½-ton trucks. South Bend, Ind. Army Mobility Command (AMC), Warren, Michigan.
- 9—**White Brothers Construction Co., Inc., and Ott-Atwater, Inc.**, Walla Walla, Wash. \$1,619,854. Construction and excavation work on the Blue River Reservoir Project. Blue River (Lane County), Oregon. Portland, Oregon, Engineer Dist.
- 12—**General Motors Corp., Cadillac Motor Car Div.**, Cleveland, Ohio. \$20,656,173. Four year buy of M109 Medium Self-Propelled 155mm Howitzers and XM551 Armored Reconnaissance/Airborne Assault Vehicles. Army Tank Automotive Plant in Cleveland. U.S. Army Weapons Command (AMC), Rock Island, Ill.
- Baxter Construction Co.**, Houston, Tex. \$1,720,973 (NASA funds). Construction of electronics systems compatibility facility at the Manned Spacecraft Center, Houston, Tex. Engineer Dist., Fort Worth, Tex.
- REDM Corp.**, Wayne, N.J. \$1,026,853. Head assemblies for mortar fuzes. Wayne, N.J. Ammunition Procurement & Supply Agency (AMC), Joliet, Ill.
- Hughes Tool Co., Aircraft Div.**, Culver City, Calif. \$5,560,046. Primary helicopter trainers with installed engines. Culver City, Calif. Aviation Command (AMC), St. Louis, Mo.
- 14—**Eltra Corp., Prestolite Co. Div.**, Toledo, Ohio. \$1,062,185. 2,564 generators and 8,329 armatures for tactical vehicles. Bay City, Mich. Army Tank Automotive Center (AMC), Warren, Michigan.
- 15—**Norris-Thermador Corp.**, Los Angeles, Calif. \$1,044,835. 105mm ordnance items. Los Angeles, Calif. Los Angeles Procurement Dist. (AMC), Pasadena, Calif.
- M.M. Sundt Construction Co.**, Tucson, Ariz. \$1,638,235. Work on the Gila River and Tributaries, Arizona and New Mexico Project. Diversion Channel (Phase III) at Tucson, Ariz. Dist. Corps of Engineers, Los Angeles, Calif.

- FMC Corp., Ordnance Div., San Jose, Calif. \$3,444,000. 42 tracked trucks and 14 fork lift attachments and bulldozer blade attachments for the Air Force. San Jose, Calif. San Francisco Procurement Dist. (AMC), Oakland, Calif.
- Pearce & Gresham Co., Decatur, Ala. \$1,332,544. Construction of missile systems calibration facility at the Redstone Arsenal, Ala. Mobile Ala., Dist. Corps of Engineers.
- 16—Akwa-Downey Construction Co. and Radio Communications Co., Inc., Milwaukee, Wis. \$3,199,500. Furnishing and installing instrumentation and communications cable at Launch Complex No. 39 at Merritt Island, Fla. Canaveral Dist. Corps of Engineers, Merritt Island, Fla.
- John R. Hollingsworth Co., Phoenixville, Pa. \$1,485,718. 3,128 generator sets. Phoenixville, Pa. Engineer Procurement Office (AMC), Chicago, Ill.
- 19—Eugene Luhr & Co., Sacramento, Calif. \$1,430,379. Excavation work on the Walnut Creek Channel Improvement Project. Concord, California. Dist. Corps of Engineers, Sacramento, Calif.
- Dennis Brothers Contractors, Jackson, Miss. \$4,089,512. Work on the Jackson and East Jackson Local Flood Protection Project. Jackson, Miss. Army Engineer Dist., Mobile, Ala.
- Norfolk Dredging Co., Norfolk, Va. \$1,194,054. Work on the Inland Waterways Project. Sarasota and Venice, Fla. Dist. Corps of Engineers, Jacksonville, Fla.
- 22—Inlet Co., Inc., Anchorage, Alaska. \$1,221,800. Construction of an addition to the existing West Anchorage High School. Anchorage, Alaska. Alaska District Corps of Engineers, Anchorage, Alaska.
- Donovan Construction Co., Power Engineering Co., Inc., & Leslie Miller, Inc., St. Paul, Minn. \$3,708,213. Work on the Keystone Reservoir Project. Tulsa, Okla. District Corps of Engineers, Tulsa, Okla.
- 23—Glenroy Construction Co., Indianapolis, Ind. \$1,405,816. Construction of two enlisted men's barracks and supporting utilities at Fort Benjamin Harrison, Ind. District Corps of Engineers, Chicago, Ill.
- Thompson-Ramo-Wooldridge Space Technology Laboratories, Inc., Redondo Beach, Calif. \$1,102,000. Modification to an existing cost-plus-fixed-fee contract for work on a classified project. U.S. Army Electronics Command (Army Materiel Command), Fort Monmouth, N. J.
- Williams-McWilliams Industries, Inc., New Orleans, La. \$1,008,691. Rental of a Cutter Head Hydraulic Pipe Line Dredge. Mississippi River. Engineer District, Vicksburg, Mississippi.
- Electronic Modules Corp., Timonium, Md. \$1,000,000. Classified Electronics. Timonium, Md. U.S. Army Electronics Command (AMC), Fort Monmouth, N.J.
- 26—Standards Products Co., Cleveland, Ohio. \$1,169,550. Shoe assemblies for M113 personnel carrier. Port Clinton, Ohio. Army Tank Automotive Center (AMC), Warren, Mich.
- FMC Corp., Ordnance Div., Charleston, W. Va. \$38,442,675. M113 vehicles and spare parts. Charleston. Army Tank Automotive Center (AMC).
- George E. Detzel Co. and Carl M. Geupel Construction Co., Cincinnati, Ohio. \$5,424,048. Work on Huntington Reservoir Project, Huntington, Indiana. Louisville, Ky., District Corps of Engineers.
- 27—General Motors Corp., Detroit Diesel Div., Detroit, Mich. \$1,460,053. Six-cylinder, 210 horsepower diesel engines. Detroit, Mich. Army Tank Automotive Center (AMC), Warren, Mich.
- 28—L. Johnson Construction Co., Minneapolis, Minn.; Dravo Corp., Pittsburgh, Pa. and Massman Construction Co., Kansas City, Mo. \$22,109,400. Work on Ozark Lock & Dam Project. Ozark, Ark. Engineer District, Little Rock, Ark.
- 29—Bell Helicopter Co., Fort Worth, Tex. \$1,570,128. UH-1B and UH-1D IROQUOIS helicopters. Hurst, Tex. U.S. Army Aviation Command (AMC), St. Louis, Mo.
- SCM Corp., Kleinschmidt Div., Deerfield, Ill. \$1,399,546. Teletypewriter sets (AN/UGC-4 and TT-98/FG) with ancillary items. Deerfield. Procurement Div. of Electronics Command (AMC), Philadelphia, Pa.
- Oneglia and Gervasini, Inc., Torrington, Conn. \$5,726,021. Work on Colebrook River Reservoir Project. Colebrook, Conn. New England Engineer Div., Waltham, Mass.
- Magnavox Co., Fort Wayne, Ind. \$23,462,116. Radio receivers of various types. Fort Wayne, Ind. Procurement Div. of the Electronics Command (AMC), Philadelphia, Pa.
- Raytheon Co., Lexington, Mass. \$2,381,784. Quality assurance, control and engineering services. Andover, Mass. U.S. Army Missile Command (AMC), Redstone Arsenal, Huntsville, Ala.
- 30—Remington Arms Co., Inc., Bridgeport, Conn. \$10,954,110. Small arms ammunition. Lake City Army Ammunition Plant, Independence, Mo. Ammunition Procurement and Supply Agency (AMC), Joliet, Ill.
- Hercules Powder Co., Wilmington, Del. \$4,694,250. Miscellaneous propellants and explosives. Radford Army Ammunition Plant, Radford, Va. Ammunition Procurement and Supply Agency (AMC), Joliet, Ill.
- Ford Motor Co., Dearborn, Mich. \$2,402,367. 1,687 commercial sedans. Claycomo, Mo. Army Tank Automotive Center (AMC), Warren, Mich.
- White Motor Co., Lansing, Mich. \$14,617,430. 2,816 cargo trucks, 2½ ton. Lansing, Mich. Project Manager, General Purpose Vehicles (AMC).
- FMC Corp., Ordnance Div., San Jose, Calif. \$1,163,788. Shoe assemblies for M113 personnel carrier. Muncie, Ind., Filer City, Mich. and Charleston, W. Va. Army Tank Automotive Center (AMC).
- General Time Corp., Westclox Div., LaSalle, Ill. \$7,119,962. Partially loaded metal parts and fuzes. Peru, Ill. Ammunition Procurement and Supply Agency (AMC), Joliet, Ill.
- Oshkosh Motor Co., Oshkosh, Wis. \$4,310,191. 75 snow removal units. Oshkosh, Wis. Engineer Procurement Officer (AMC), Chicago, Ill.
- Sperry Rand Corp., Sperry-Utah Co. Div., Salt Lake City, Utah. \$3,234,269. Modification kits for the SERGEANT missile system. Salt Lake City, Utah. Los Angeles Procurement District (AMC), Pasadena, Calif.
- Olin Mathieson Chemical Corp., Winchester Western Div., East Alton, Ill. \$2,005,140. 5.56mm tracer cartridges. East Alton, Ill. Frankford Arsenal (AMC), Philadelphia, Pa.
- Ashburn and Gray, Inc., Huntsville, Ala. \$1,656,864. Construction of phase II of the road network at Marshall Space Flight Center, Huntsville, Ala. Engineer District, Mobile, Ala.
- Emerson Electric Co., Electronics and Space Div., St. Louis, Mo. \$1,327,884. Production of rocket motor inert parts for HONEST JOHN missile system. St. Louis, Mo. U.S. Army Missile Command (AMC), Huntsville, Ala.

—N. R. Hamm Contractors, Inc., Perry, Kan. \$1,991,279. Flood protection work at section two of Kansas River tributaries, Colorado, Nebraska, and Kansas Project. Topeka, Kan. Engineer District, Kansas City, Mo.

—FMC Corp., San Jose, Calif. \$1,208,685. Continuation of engineering services, repair, provisioning and maintenance evaluation for vehicles and weapons. San Jose, Calif. San Francisco Procurement District (AMC), Oakland, Calif.

30—La Pointe Industries, Rockville, Conn. \$1,134,690. Radio sets (AN/ARC-44). Rockville, U.S. Army Electronics Command (AMC), Philadelphia, Pa.

NAVY

1—Stanford University, Stanford, Calif. \$2,275,000. Continuation of research & development in the field of nuclear physics. Office of Naval Research.

2—University of Chicago, Chicago, Ill. \$1,250,000. Research & development in the field of nuclear physics. Office of Naval Research.

5—Bendix Corp., Bendix Radio Div., Baltimore, Md. \$2,450,590. Radio receivers for installation on naval ships. Baltimore, Md. Bureau of Ships.

—American Electronic Laboratories, Inc., Colmar, Pa. \$1,755,857. Radio transmitters for use on naval ships and at shore installations. Colmar, Pa. Bureau of Ships.

6—General Electric Co., Pittsfield, Mass. \$2,336,221. Mark 84 Fire Control System Support for the Polaris Missile. Pittsfield, Mass. Special Projects Office.

—General Precision, Inc., Aerospace Group, Little Falls, N.J. \$1,000,000. Research & development on airborne gyrocompasses. Wayne, N.J. Bureau of Naval Weapons.

—Litton Systems, Inc., Guidance & Control Systems Div., Woodland Hills, Calif. \$8,715,062. Inertial navigation systems. Woodland Hills, Calif. Bureau of Naval Weapons.

7—Buxmont Ordnance Co., Inc., a subsidiary of the J.W. Rex Co., Lansdale, Pa. \$6,509,065. 250-pound bomb bodies. Berwick, Pa. U.S. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—Bethlehem Steel Corp., Baltimore, Md. \$32,247,000. Conversion of the USS CALOOSAHATCHEE (AO-98) and the USS CANISTEO (AO-99). Baltimore and Sparrows Point, Md. yards. Bureau of Ships.

—Todd Shipyards Corp., San Pedro, Calif. \$17,741,654. Conversion of the USS ASHTABULA (AO-51). San Pedro, Calif. Bureau of Ships.

8—Magnavox Co., Ft. Wayne, Ind. \$2,664,365. Sonobuoys. Ft. Wayne, Ind. Bureau of Naval Weapons.

—Sun Shipbuilding & Dry Dock Co., Chester, Pa. \$2,387,000. Construction of a conical shock tube facility at the U.S. Naval Weapons Laboratory, Dahlgren, Va. Bureau of Yards & Docks through the Dir., Chesapeake Div.

9—Ling-Temco-Vought, Inc., LTV Vought Aeronautics, Dallas, Tex. \$1,833,000. Technical manuals to support A-7A aircraft. Dallas, Tex. Bureau of Naval Weapons.

—General Electric Co., Heavy Military Electronics Dept., Syracuse, N.Y. \$6,500,000. Modification kits (including drawings, technical manuals, and engineering services) for installation on sonar equipment aboard naval ships. Syracuse, N.Y. Bureau of Ships.

—Hughes Aircraft Co., Culver City, Calif. \$2,800,000. PHOENIX missile system. Culver City, Calif. Bureau of Naval Weapons.

13—Lockheed Missiles and Space Co., Sunnyvale, Calif. \$17,164,310. Project Definition Phase for POSEIDON missile system including the propulsion subsystem. Under this contract, Aerojet-General, Corp., Sacramento, Calif., and Hercules Powder Co., Baccus, Utah, will receive \$4,163,219 and \$4,446,505, respectively, as subcontractors. Sunnyvale, Sacramento, and Baccus. Special Projects Office.

—General Electric Co., Ordnance Div., Pittsfield, Mass. \$1,020,051. Project Definition Phase for fire control system for POSEIDON missile. The contract includes industrial support to the Massachusetts Institute of Technology for a guidance system for POSEIDON. Pittsfield. Special Projects Office.

—Technical Material Corp., Mamaroneck, N.Y. \$1,886,246. 62 items of spare parts for Navy communication systems. West Nyack and Mamaroneck, N.Y. U.S. Navy Purchasing Office, Washington, D.C.

—Bendix Corp., Mishawaka, Ind. \$1,450,000. Development, test, and evaluation effort on the TALOS missile program. Mishawaka. Bureau of Naval Weapons.

14—Cessna Aircraft Co., Wichita, Kan., \$1,024,823. Ejector pylon assemblies for fuel tanks on Navy and Air Force aircraft. Wichita. Bureau of Naval Weapons.

—Honeywell Inc., Aeronautical Div., Minneapolis, Minn. \$1,072,702. 52 items of spare parts for use in the S-2E TRACKER aircraft automatic pilot system. Minneapolis, Minn. U. S. Navy Aviation Supply Office, Philadelphia, Pa.

—Peterson Builders, Inc., Sturgeon Bay, Wis. \$1,973,676. Construction of six motor gun boats (PGM). Sturgeon Bay. Bureau of Ships.

15—Aerojet General Corp., Azusa, Calif. \$10,980,061. Procurement of MK46 torpedoes. Azusa. Bureau of Naval Weapons.

—McLean Contracting Co., Baltimore, Md. \$1,399,000. Construction of a ship berthing facility at the U.S. Naval Station, Charleston, S.C. Bureau of Yards and Docks through Director, Southeast Div.

16—The Woods Hole Oceanographic Institution, Woods Hole, Mass. \$1,980,000. Research in oceanography. Woods Hole. Office of Naval Research.

—Western Electric Co., New York, N.Y. \$5,326,300. Oceanographic research. Whippany, N.J. U.S. Navy Purchasing Office, Washington, D.C.

19—General Dynamics Corp., Pomona Div., Pomona, Calif. \$2,192,845. Production of TARTAR and TERRIER missiles. Pomona. Bureau of Naval Weapons.

—North American Aviation, Inc., Columbus, Ohio. \$675,000. Program definition phase of CONDOR, a short range air-to-surface missile, planned for use with A-6A Intruder. Naval Ordnance Test Station, China Lake, Calif.

—Northrop Corp., Nortronics Div., Hawthorne, Calif. \$675,000. Program definition phase of CONDOR, a short range air-to-surface missile, planned for use with A-6A Intruder. Naval Ordnance Test Station, China Lake, Calif.

20—United Aircraft Corp., Pratt and Whitney Aircraft Div., East Hartford, Conn. \$5,739,897. TF-30 and J-52 engines. East Hartford, Conn. Bureau of Naval Weapons.

—Westinghouse Electric Corp., Baltimore, Md. \$4,500,000. Development effort related to the fleet ballistic missile system. Sunnyvale, Calif., and Baltimore, Md. Special Projects Office.

—McDonnell Aircraft Corp., St. Louis, Mo. \$482,142,000. Production of F-4D, RF-4C and RF-4B PHANTOM II aircraft for the Navy and Air Force. St. Louis, Mo. Bureau of Naval Weapons.

- Peterson Builders, Inc., Sturgeon Bay, Wis. \$4,956,000. Construction of four inshore minesweepers (MSI). Sturgeon Bay, Wis. Bureau of Ships.
- United Aircraft Corp., Sikorsky Aircraft Div., Stratford, Conn. \$1,269,266. Refurbishing and conversion of SH-3A helicopters to RH-3A configuration. Stratford, Conn. Bureau of Naval Weapons.
- Bendix Corp., York Div., York, Pa. \$1,213,250. Design and development for PHOENIX missile. York, Pa. U.S. Navy Purchasing Office.
- 21—Sperry Gyroscope Co., Syosset, New York. \$2,124,434. Inertial navigation subsystem components for installation on nuclear powered Fleet Ballistic Missile submarines. Syosset. Bureau of Ships.
- Collins Radio Co., Dallas, Tex. \$3,874,206. Six communications sets and seven data terminal sets, installation with Naval Tactical Data System aboard naval ships. Cedar Rapids, Iowa, and Richardson, Tex. Bureau of Ships.
- 22—Westinghouse Electric Corp., Baltimore, Md. \$1,750,000. Components of radar sets for installation on RA-5C VIGILANTE attack aircraft. Baltimore, Md. U.S. Navy Aviation Supply Office, Philadelphia, Pa.
- Columbus Milpar and Mfg. Co., Columbus, Ohio. \$3,372,880. MK 14 bomb fins. Columbus, Ohio. U.S. Naval Ordnance Plant, Louisville, Ky.
- Sparton Corp., Electronics Div., Jackson, Mich. \$1,003,061 and \$4,457,796. Sonobuoys. Jackson, Mich. Bureau of Naval Weapons.
- 26—Sylvania Electric Products, Inc., Waltham, Mass. \$2,526,910. Computer systems with components for installation aboard naval ships. Waltham, Mass. Bureau of Ships.
- 27—Sangamo Electric Co., Springfield, Ill. \$6,759,658. Sonar improvement kits for installation aboard surface ships. Springfield, Ill. Bureau of Ships.
- Sanders Associates, Inc., Nashua, N.H. \$1,633,974. Antennas for SHRIKE missile. Nashua, N.H. Bureau of Naval Weapons.
- General Ships and Engine Works, Inc., East Boston, Mass. \$1,357,992. Two landing craft, utility (LCU). East Boston, Mass. Bureau of Ships.
- 29—Sunstrand Corp., Rockford, Ill. \$8,157,680. Electrical equipment for F-4B and F-4C aircraft. Rockford, Ill. U.S. Navy Purchasing Office, Washington, D.C.
- Magnavox Co., Fort Wayne, Ind. \$1,443,469. Sonobuoys. Fort Wayne, Ind. Bureau of Naval Weapons.
- Lasko Metal Products, Inc., West Chester, Pa. \$3,340,562. SNAKE EYE bomb fins. West Chester, Pa. U.S. Naval Ordnance Plant, Louisville, Ky.
- Hughes Aircraft Co., Culver City, Calif. \$9,200,000. PHOENIX missile system. Culver City, Calif. Bureau of Naval Weapons.
- 30—United Aircraft Corp., Pratt and Whitney Aircraft Div., East Hartford, Conn. \$1,800,000. Spare parts for support of the TF30-P1 engine for the F-111 aircraft. East Hartford, Conn. U.S. Navy Aviation Supply Office, Philadelphia, Pa.
- Bendix Corp., Mishawaka, Ind. \$26,272,073. Production of TALOS missiles. Mishawaka-South Bend, Ind. Bureau of Naval Weapons.
- 2—Atlantic Research Corp., Propulsion & Chemical System Div., Alexandria, Va. \$1,221,340. Meteorological rockets required for high altitude air weather test programs. Alexandria. Ogden Air Materiel Area (AFLC), Hill AFB, Utah.
- Continental Aviation & Engineering Corp., Detroit, Mich. \$2,396,697. Component improvement program for J-69 series engine. Detroit. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.
- 5—AVCO Corp., Stratford, Conn. \$4,200,000. Component improvement program for T-53 series engine. Stratford. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.
- Litton Systems, Inc., Guidance & Control Systems Div., Woodland Hills, Calif. \$10,758,335. Spare parts for maintenance and overhaul of the F/RF-4C aircraft navigation system. Woodland Hills. Middletown Air Materiel Area (AFLC), Olmsted AFB, Pa.
- 6—Kollsman Instrument Corp., Elmhurst, N.Y. \$3,165,000. Mapping and survey systems. Elmhurst. Space Systems Div. (AFSC), Los Angeles, Calif.
- 7—General Precision, Inc., Little Falls, N.J. \$1,710,168. Conduct of a flight feasibility test program for a stellar inertial guidance system. Little Falls. Ballistic Systems Div. (AFSC), Norton AFB, San Bernardino, Calif.
- 8—General Precision, Inc., Kearfott Div., Little Falls, N.J. \$2,530,141. Spare parts for maintenance and overhaul of navigation equipment on C-141 aircraft. San Marcos, Calif. Middletown Air Materiel Area (AFLC), Olmsted AFB, Pa.
- AVCO Corp., Stratford, Conn. \$1,650,000. Development program of the T-53 series aircraft engine. Stratford. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.
- 9—United Electrodynamics, Inc., Pasadena, Calif. \$1,363,532. Work on a classified project. Alexandria, Va. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.
- Dow Chemical Co., Midland, Mich. \$1,125,000. Development and evaluation of advanced solid propellants. Midland. Air Force Flight Test Center (AFSC), Edwards AFB, Calif.
- 12—General Electric Co., West Lynn, Mass. \$15,192,000. Production of J-85 turbojet engines. West Lynn. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.
- General Dynamics/Ft. Worth, Ft. Worth, Tex. \$45,000,000. Procurement of 10 F-111 aircraft and long lead time items to be used in 59 additional production aircraft.
- 14—Lockley Machine Co., New Castle, Pa. \$1,054,656. Production of practice bombs. New Castle. San Antonio Air Materiel Area (AFLC), Kelly AFB, Tex.
- 15—Boeing Co., Seattle, Wash. \$1,205,000. Continuation of research, development, test and evaluation work on the second through fifth MINUTEMAN wings. Seattle and at Patrick AFB, Fla. Ballistic Systems Div. (AFSC), Norton AFB, Calif.
- 16—Boeing Co., Wichita, Kan. \$3,177,702. Modification of B-52 aircraft. Wichita. Oklahoma City Air Materiel Area (AFLC), Tinker AFB, Okla.
- Microwave Dynamics Corp., Mesa, Ariz. \$1,277,000. Production of cartridge type engine starters. Mesa. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.
- 19—Lockheed Missiles & Space Co., Sunnyvale, Calif. \$3,000,000. Engineering support for the AGENA booster system. Sunnyvale. Space Systems Div. (AFSC), Los Angeles, Calif.

AIR FORCE

- 1—Northeast Construction Co. of West Virginia, Albuquerque, N.M. \$1,772,949. Construction of 109 family housing units at Holloman AFB, N.M. Air Force Missile Development Center (AFSC), Holloman AFB, N. M.

AFLC Announces AMA Phase Out Plan

—Sylvania Electric Products, Inc., Mountain View, Calif. \$3,277,197. Spare parts for electronic data processing equipment. Mountain View. Warner Robins Air Materiel Area (AFLC), Robins AFB, Ga.

20—North American Aviation, Inc., Rocketdyne Div., Canoga Park, Calif. \$2,422,000. ATLAS rocket engine propulsion systems. Canoga Park, Calif., and at Neosho, Mo. Space Systems Div. (AFSC), Los Angeles, Calif.

—Ryan Aeronautical Co., San Diego, Calif. \$3,565,100. Aerial target drones. San Diego, Calif. Mobile Air Materiel Area (AFLC), Brookley AFB, Alabama.

21—Cornell University, Ithaca, N.Y. \$1,480,537. Research in field of ionospheric physics. Ithaca, N.Y. and Arecibo, Puerto Rico. Air Force Office of Scientific Research, Washington, D.C.

—Martin Marietta Corp., Orlando, Fla. \$2,249,463. Ground equipment for BULLPUP missiles. Orlando, Fla. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.

—Martin Marietta Corp., Martin Co., Div., Denver, Colo. \$16,000,000. TITAN III X space boosters and associated equipment. Denver, Colorado. Space Systems Div. (AFSC), Los Angeles, Calif.

22—Bendix Corp., Teterboro, N. J. \$1,722,035. Navigation computer sets for F-4C aircraft. Teterboro, N.J. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.

—Thiokol Chemical Corp., Bristol, Pa. \$2,300,000. MINUTEMAN Stage I operational and flight test rocket motors. Brigham City, Utah. Ballistic Systems Div. (AFSC), Norton AFB, San Bernardino, Calif.

23—Lockheed Aircraft Corp., Marietta, Ga. \$4,000,000. C-141 aircraft. Marietta, Ga. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.

—System Development Corp. Santa Monica, Calif. \$1,500,000. Work in support of the satellite control system. Santa Monica, Calif. Electronic Systems Div. (AFSC), L.G. Hanscom Field, Mass.

28—Benson Manufacturing Co., Kansas City, Mo. \$4,524,932. 650-gallon tank and pylon assemblies and related equipment for F-105 aircraft. Kansas City, Mo. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.

—North American Aviation, Inc., Autonetics Div., Anaheim, Calif. \$1,797,184. Spare parts for MINUTEMAN missile airborne guidance and control systems. Anaheim, Calif. Ogden Air Materiel Area (AFLC), Hill AFB, Utah.

29—Lockheed Aircraft Corp., Marietta, Ga. \$3,000,000. Procurement of C-130 aircraft and related equipment. Marietta, Ga. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Dayton, Ohio.

—Westinghouse Corp., Baltimore, Md. \$920,000. Electronic equipment. Baltimore, Md. Aeronautical Systems Div. (AFSC), Wright-Patterson AFB, Ohio.

—Cardion Electronics, Inc., Westbury, N.Y. \$1,985,781. Radar sets and decoder units. Westbury, N.Y. Electronics Systems Div. (AFSC), L.G. Hanscom Field, Bedford, Mass.

30—General Electric Co., Missile and Space Div., Valley Forge, Pa. \$1,806,570. Design, development, test and production of a test satellite. Philadelphia, Pa. Space Systems Div. (AFSC), Los Angeles, Calif.

—Boeing Co., Seattle, Wash. \$6,000,000. Modernization of MINUTEMAN missiles. Knob Noster, Mo. Ballistic Systems Div. (AFSC), Norton AFB, San Bernardino, Calif.

The Air Force Logistics Command (AFLC) has announced detailed plans for the phasing out of logistics operations at two of its Air Materiel Area (AMA) installations—Middletown AMA, Olmsted AFB, Pa., and Mobile AMA, Brookley AFB, Ala.

The plan for each installation covers the relocation of specific logistics responsibilities and the approximate supporting personnel changes to take place from June 1965 through January 1966.

Initial details for the phasing out of a third installation, the San Bernardino AMA, at Norton AFB, Calif., are expected to be released in the near future.

This action is the first step in implementing the Secretary of Defense's directive of November 19, 1964, to close these AMA's during the period June 1965 to June 1969.

Following is a listing of transfers of AMA logistics responsibilities announced to date.

From Middletown AMA (during June 1965—January 1966):

To San Antonio AMA, Kelly AFB, Tex.:

- Materiel management and support for trainer aircraft and F-5, parachutes, flight clothing and Project Slow-Down.

- Procurement of recruitment advertising.

To Wright-Patterson AFB, Ohio:

- Procurement of contract technical support and special projects.

- Materiel management of Grant Aid (MAP) Control.

To Warner Robins AMA, Robins AFB, Ga.:

- Materiel management and support for cargo aircraft, helicopters, utility, O-1-P2-E aircraft.

- Maintenance for bomb navigation items (FSC 1280), area support, parachutes and flight clothing.

To Sacramento AMA, McCellan AFB, Calif.:

- Materiel management and support for T-39 aircraft.

To Ogden AMA, Hill AFB, Utah:

- Materiel management and support for photographic items. (FSC's PK 5900, 6710/20/30/40/60/80).

- Maintenance for RF-101 aircraft.

- Management Engineering Program Team (portion).

To Oklahoma City AMA, Tinker AFB, Okla.:

- Maintenance of J-79 engines, engine instruments (FSC 6620) and area support.

- Management Engineering Program Team (portion).

From Mobile AMA (during June 1965—December 1965):

To Sacramento AMA, McCellan AFB, Calif.:

- Materiel management and support for F-105 and F-84 aircraft.

To Warner Robins AMA, Robins AFB, Ga.:

- Materiel management and support for B-66, HU-16 aircraft and Q-2 drone.

- Supply distribution point for vehicle spares.

- Management Engineering Program Team (portion).

To Ogden AMA, Hill AFB, Utah:

- Maintenance for photographic items (FSC 6710/20/60).

To Wright-Patterson AFB, Ohio:

- Materiel management for Grant Air (MAP) Control.

- Management Engineering Program Team (portion).

To U.S. Navy:

- Overseas shipment of aircraft.

To Oklahoma City AMA, Tinker AFB, Okla.:

- Management Engineering Program Team (portion).

OFFICE OF THE SECRETARY OF DEFENSE

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OFFICIAL BUSINESS



Increased Dollar Returns Sought Through Market Research of Surplus

In an effort to provide complete information to meet buyers' specific needs and thereby widen the range of civilian and industrial use of DOD surplus, three market research study groups at the Defense Logistics Services Center (DLSC), Battle Creek, Michigan, are studying problems involving the merchandising of high-volume surplus defense items which normally produce low rates of return.

The object is to provide prospective buyers better service, more product data, including application data to meet their specific needs. The result is expected to be higher dollar returns for the Government.

DLSC is a major field activity of the Defense Supply Agency. It has as one of its responsibilities the surplus personal property disposal program.

The study groups are concentrating on a varied list of commodities. Included are motor vehicles, trailers and cycles, tractors, vehicular equipment components, engine accessories, maintenance and repair shop equipment, aircraft components and accessories, communications equipment, electrical and electronic components, electric wire, power, and distribution equipment, and instrument and laboratory equipment.

The studies will produce advice and marketing aids for the Defense Surplus Sales Offices, which are managed and operated by DLSC. These aids provide guidance in segregating, lotting, describing and identifying items of surplus property. They indicate those items containing precious metals, those which bring a reasonable rate of return and should be considered for sale as usable items and, conversely, those that are to be considered for direct scrapping.

Other instructions provide automotive classification code numbers for use in properly describing automotive equipment, or provide standard abbreviations for electronic terms.

Tips are given on merchandising electron tubes which would have special appeal to certain markets. A cross-reference listing, for example, shows American substitutes for European tubes and American-European exact replacements for European tubes. The listing serves to identify tubes by European markets, by export markets and by dealers of imported electronic equipment in the United States.

CAS Region to be Established in Dallas

The third Defense Contract Administration Services (CAS) Region will be established in Dallas, Tex., on June 1, 1965.

The new region headquarters will be located at 500 S. Ervay Street, in Dallas. There will be five subordinate offices in Texas—an area office in San Antonio and plant offices at Texas Instruments, Inc., and Collins Radio Co., in Dallas; at Rocketdyne, in McGregor; and at Ling-Temco-Vought, Inc., in Greenville. An area office will be opened in Oklahoma City, Okla., and a plant office at Douglas Aircraft Co., Inc., in Tulsa, Okla.

The Dallas CAS Region will perform contract administration on defense contracts in Arkansas, Louisiana, New Mexico, Oklahoma and Texas.

The principal existing organizations being consolidated are the Air Force Contract Management District in Dallas, together with its offices in Greenville, McGregor and San Antonio, Tex., and Tulsa, Okla.; the Army Branch Office of the St. Louis Procurement District, in Dallas; the Navy Inspector of Naval Material, in Dallas; and several offices of the military services and the Defense Supply Agency.

Colonel Charles F. Burley, USAF, will be the Director of the new region.